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CONSULTANCY STUDY ON THE LONG-TERM DEVELOPMENT OF CHILD CARE SERVICES

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Executive Summary

Introduction

The Social Welfare Department ("SWD") has commissioned The University of Hong Kong to conduct a consultancy study on the long-term development of child care services in Hong Kong. In order to improve on the quality and provision of these services, this study aims to review and evaluate the overall provisions of the current six types of day child care services in Hong Kong, namely standalone Child Care Centres ("CCCs"), Child Care Centres attached to Kindergartens ("CCCs attached to KGs"), Occasional Child Care Service ("OCCS"), Extended Hours Service ("EHS"), Mutual Help Child Care Centres ("MHCCCs") and Neighbourhood Support Child Care Project ("NSCCP"), and provide recommendations on the future planning and various aspects.

This study encompasses a variety of data collection methodologies. In-depth literature research was conducted to review the current philosophy and policy objectives of child care services in Hong Kong as well as in six international jurisdictions. In addition, data regarding the provision of day child care services were compiled through comprehensive stocktaking and analysis, and geographical information system was used for the data analyses. Furthermore, opinions were gathered through interviews with 106 stakeholders and by distribution of questionnaires to child care services users and non-users.

The philosophy and objectives of child care services in Hong Kong, comparing the situation in Hong Kong with the other six jurisdictions

Hong Kong's current philosophy and objectives in child care services were developed decades ago and guided by the 1991 White Paper which was primarily care-oriented and welfare-based in providing assistance to children from disadvantaged backgrounds. Meanwhile, changes in the socio-economic and demographic profiles, e.g. more women participating in the labour force and the increase of single-parent families in Hong Kong, demonstrated that despite efforts made over the years by the Government to help families in need, the current child care services still cannot meet the demands arising from these changes. At the same time, at the international level, catapulted by the advances in the understandings of early brain and early childhood development, policies on Early Childhood Education and Care ("ECEC") have moved from two separate systems, 'care' and 'education', towards one unified system to provide both education and high-quality care to help young children develop holistically. However, researches also showed that parental care and bonding is the foundation of a child's development and that all early experiences are educational, no matter whether the child is at home, with extended families and friends, or in child care centres.

Different policies and aspects of ECEC in the six jurisdictions were measured and compared with Hong Kong. Owing to their different welfare regimes and objectives in child care, it was discovered that:

- On universal child care, defined as child care benefit provided for every child regardless of background, four of the seven jurisdictions reviewed have some kind of universal child care. One has plans to implement universal child care in the future; another is similar to Hong Kong, which uses the means-test and targets families in need. Hong Kong, however, adopts the approach of targeting low-income families together with social needs;
- On the expenditure of pre-primary education and services, Hong Kong has one of the lowest expenditure among the seven jurisdictions as a percentage of GDP and as a percentage of known government spending;
- On the qualified staff-to-child ratio, although one jurisdiction has no regulation, taking into account the typical ratio in practice, Hong Kong has the highest staff-to-child ratio, and it can be up to 2 or 3 times higher than certain jurisdictions for children aged 24 to 36 months;
- On regulatory and monitoring system, two of the seven jurisdictions studied have a unitary system. Similar to the other four, Hong Kong has two distinct ordinances and regulatory systems overseeing pre-primary care and education;
- On the qualification of child care staff in child care centres, while Hong Kong is comparable to certain jurisdictions, when compared with the jurisdictions such as Finland and Sweden which have the highest level of qualification requirement in this study, there is still room for improvement. Regarding home carers, unlike other jurisdictions such as Sweden and Singapore, Hong Kong has no education and training requirements; and
- On tax rate, among all the seven jurisdictions, Hong Kong has the lowest rate at 15%, while the tax rates in the other six jurisdictions range from 20% to 57%.

Analysing the current child care services in terms of availability, accessibility and affordability

With the comprehensive stocktaking, analyses of the current child care services show that there are differences between the general profile of government-subsidised and non-government-subsidised services. In terms of:

- **Availability** - The demand for government-subsidised places is relatively more intense than non-government-subsidised places for children aged 0 to under 3. The availability of government-subsidised places for children aged 0 to under 2 is significantly fewer than the availability for children aged 2 to under 3. There are also some spatial differences in the profile of child care services which can be identified from the maps with relatively higher and lower provision. At the level of the 18-districts, the demand-to-supply ratio indicates

that in some districts, there is no provision of standalone CCCs for children aged 0 to under 2.

- **Accessibility** - At the level of smaller areas, children who live in some street blocks are facing problems accessing child care centres. In some street blocks in the New Territories, the distance to the nearest centre is significantly farther than the overall Hong Kong situation. Furthermore, the demand for places is much higher in the New Territories than in the overall Hong Kong situation.
- **Affordability** - There are also spatial variations in affordability, calculated as the median monthly child care service fee divided by the median monthly household income and expressed in percentage (%). For the aided child care centre services, the median affordability of the lowest affordable group is 39% and that of the highest affordable group is 3%, accounting for a difference of 36%.

Estimating the demand for child care services and planning ratio

- Upon examination of the questionnaires, the analyses show that from the sample of households which were using/not using child care services, it was identified that the major reasons affecting the decision of using the services include parental employment status, household composition, locations of the service centres and the quality of the services, whereas the lack of information on the availability of services is a major reason for not using the services.

- Based on the prediction models, built upon logistic regression analyses, that consider the characteristics of the household socio-economic status and composition, and the census population data, it was estimated that the demand for child care services in 2016 would be 32 736 for children aged under 2 and 36 568 for children aged 2 to under 3; and according to the population projection data from the Census and Statistics Department, the demand for child care services in 2021 to 2031 for children aged under 2 was estimated to range from 27 711 to 32 818, and from 30 955 to 36 660 for children aged 2 to under 3. It is also important to note that these estimates represent the demand for child care services as a whole irrespective of the types of services, service nature and financing modes.

- Scenario analyses were also conducted to further estimate the number of places needed for aided centre-based child care services. First, assuming that the Government becomes a single provider (i.e. responsible for 100% of child care services), in the centre-based child care service, it needs to provide 31 099 places for children aged under 2 and 36 335 places for children aged 2 to under 3 in 2016 - the corresponding planning ratio would thus be 85 and 99 per 20 000 general population, respectively. On the other hand, assuming that the public and the private split the market provision at the existing proportion,

the Government is then expected to provide 16 628 places for children aged under 2 and 7 557 places for children aged 2 to under 3 in 2016, and the corresponding planning ratio would be 45 and 21 per 20 000 general population respectively. Still, if a further approach is taken with the assumption that the existing number of non-aided centre-based places remains the same, the Government is expected to provide 30 247 places for children aged under 2 and 13 492 places for children aged 2 to under 3 in 2016, and the corresponding ratio would be 82 and 37 per 20 000 general population.

Given that the private market shows relatively less interest in the market provision of child care services for children aged under 2, it is believed that the Government should play a greater role in service provision for this age group, i.e. in providing 30 247 places or a planning ratio of 82 per 20 000 general population. On the other hand, for the service provision for children aged 2 to under 3, private market shows relatively greater interest. With a principle of not driving out other providers in market participation, the Government could take a more balanced approach in their service planning mechanism, i.e. in providing 7 557 places or a planning ratio of 21 per 20 000 general population. Thus, overall speaking, for children aged under 3, the Government is recommended to adopt a planning ratio of 103 places per 20 000 general population (i.e. 82 places per 20 000 general population for children aged under 2, plus 21 places per 20 000 general population for children aged 2 to under 3).

Views from the stakeholders

Focus group interviews were conducted and opinions were collected from different stakeholders, such as, government representatives, service providers involving the management and frontline staff, service users, non-service users and the general public. The purpose is to understand their comments, views and discrepancies between the parents' expectations and the existing services in terms of service modes and financing modes.

The eight themes generated from those interviews are as follows:

- Discrepancies exist between the parents' expectations and the existing services;
- Even with similar qualifications, child care workers are not receiving the same remunerations as their counterparts in the kindergartens;
- There were requests for a lower staff-to-child ratio and better staff training and development;
- The location, service targets and accessibility should be considered in service planning;
- Service positioning and operation of MHCCCs and NSCCP need to be enhanced respectively;
- The positioning of OCCS need to be reviewed;
- Analysis on the reasons for not using day child care services; and

- Analysis on the role of the Government vis-à-vis the private market in the provision of day child care services.

The findings shed light on the future development of the service modes and financing modes of child care services. It was confirmed that there were gaps in the current child care services. These gaps were suggested to be bridged by improving the planning mechanism, the service availability, accessibility and affordability of the overall child care services. In addition, a more diversified subsidy mechanism was suggested to enhance the affordability of child care services, while as a longer term measure, user's income-based co-payment methods might be explored with the collection of more data and analyses.

Recommendations and conclusion

It is common knowledge that children need good care to thrive, and to ensure that children receive quality care is of key concern to both parents and policy makers. In ensuring that their children receive the best care, some parents make the decision to put aside their careers and stay at home to care for their children, others rely on relatives or foreign domestic helpers, and still others choose to use child care centres or volunteer-based programmes. With the increased number of women participating in the work force, single parent families and nuclear families compounded with the advanced knowledge of early brain development and early childhood development, the existing child care services may no longer be sufficient in today's context. Service expectations and gaps in the current child care services have been identified through different channels. Taking an overall perspective to improve child care services, the following recommendations are generated for the Government's consideration:

1. Increase funding in child care services, upgrade infrastructure as well as provide more subsidies and relax the application threshold for fee subsidy;
2. Improve the qualified staff-to-child ratio for children aged 0 to under 3 so as not to only alleviate the burden on the staff, but also enhance the interactions with the children and their development;
3. Upgrade and improve the qualification and training for child care workers as well as offer training for other child carers in the home setting with a view to providing quality care to the children;
4. Encourage effective dissemination of information on child care services to potential users;
5. Improve the service quality of the NSCCP, re-position the MHCCCs and review the distribution of the OCCS;
6. Enhance the quality of child care services by embracing and incorporating the elements of early childhood development and care in the long-term development of child care services;

7. Establish an appropriate planning mechanism for the provision of child care centre service with continuous review to ensure sufficient provision of places for child care;
8. Enhance the monitoring system, financial management procedures and guidelines to reduce unnecessary workload;
9. Develop a set of quality indicators for monitoring and assessment based on child development and with reference to international practices;
10. Explore a more efficient and cost effective financing mode to cater for different types of families to reduce their financial burden and simultaneously enable resource deployment for the Government; and
11. Conduct evaluation on child care services on a regular interval to measure its development for continuous improvement.

Improvement of child care services would not be effective if it is only treated as a standalone measure. It requires all the stakeholders in the community to foster a family-friendly environment to provide an integrated and holistic support for raising all children in Hong Kong.

Chapter 1 Introduction, objectives and methodology

1.1 Introduction

In December 2016, the Social Welfare Department ("SWD") commissioned the Department of Social Work and Social Administration of The University of Hong Kong (the consultant team led by Professor Paul Yip) to conduct a "Consultancy Study on the Long-term Development of Child Care Services" in Hong Kong. In light of the experiences of relevant jurisdictions, the consultant team was tasked to review the overall provision of day child care services in Hong Kong to assess the current policies, and present recommendation on the long-term development of those services. The scope of the study is on six types of day child care services, namely standalone Child Care Centres ("CCCs"), Child Care Centres attached to Kindergartens ("CCCs attached to KGs"), Occasional Child Care Service ("OCCS"), Extended Hours Service ("EHS"), Mutual Help Child Care Centres ("MHCCCs") and Neighbourhood Support Child Care Project ("NSCCP"), excluding residential child care services and pre-school rehabilitation services.

The study involves a mixed-method research design, adopting both qualitative and quantitative work. The work includes an in-depth review of the existing child care policies in Hong Kong as well as international experiences. It also encompasses interviews with stakeholders to solicit their comments and key reflections on the service provision. The quantitative approach involves a comprehensive stocktaking via census data and questionnaires to thoroughly analyse the child care services provision. Taking into account the population spatial distribution, the geo-spatial analysis technique and population projection technique are further used to analyse the supply and demand of child care services in Hong Kong.

1.2 Objectives

The objectives of the consultancy study are as follows:

1. To make observations on the philosophy and policy objectives of day child care services;
2. To take stock of the modes of operation and positioning of day child care services with reference to the demographic changes after the harmonisation of pre-primary services and other relevant considerations;
3. To identify service gaps, to gauge the demand and supply of day child care services, and to explore a systematic and workable planning mechanism; and
4. To advise on the service modes and the financing modes of day child care services with reference to the needs of different types of families, and other relevant considerations including cost-effectiveness, sustainability, etc.

To address these research objectives, the consultant team carried out a range of research activities, including reviewing the relevant literature from the local and international settings, conducting focus-group interviews with stakeholders, analysing existing relevant available data, and conducting a large-scale territory-wide data collection exercise by means of questionnaire. While

a summary of the methodology of the research activities and their respective analytical framework is presented in this chapter, the details are embedded in each relevant chapter.

Objective 1

In making observations on the philosophy and policy objectives of child care services, the consultant team focused on the following questions:

i. What are the existing philosophy and policy objectives of child care services in Hong Kong?
ii. How well do the policy objectives meet the expectations of different stakeholders? What are the unmet expectations if any?
iii. What guidance can the international experiences of child care system in the six selected jurisdictions offer to Hong Kong?

Chapter 2 of this report summarises the findings and results in answering the specific research questions listed in (i) and (iii) of Objective 1. Chapter 5 of this report summarises the findings and results in answering question (ii) of Objective 1 above.

Objective 2

To take stock of the modes of operation and positioning of day child care services with reference to the demographic changes after the harmonisation of pre-primary services and other relevant considerations, the consultant team analysed the most recently available data obtained from various sources to reflect the existing provision of child care services in Hong Kong, (including, but not limited to the number of places, their hours of operation, fees, and trained staff). In this regard, the consultant team addressed the following questions:

i. What is the existing provision of child care services in Hong Kong like (e.g. the number of places, their hours of operation, fees, and trained staff)?
ii. What are the general profile and the three key indicators (accessibility, availability and affordability) of child care services in Hong Kong?
iii. Are there any differences between the general profile and the three key indicators of government-subsidised child care services verses non-government-subsidised child care services in Hong Kong?
iv. Are there any spatial differences in the profile of child care services in Hong Kong?

Chapter 3 summarises the findings and results in answering the specific research questions listed in Objective 2 above.

Objective 3

In order to identify the service gap, to gauge the demand and supply of day child care services and to explore a systematic and workable planning mechanism, the consultant team engaged different research activities, including conducting a large-scale data collection exercise by means of questionnaire, reviewing local and global literature, as well as data, and conducting focus group interviews.

The consultant team collected information from a large-scale data collection exercise by means of questionnaire to address the following specific research questions:

i. What factors affect the demand for child care services (e.g. family composition, quality of services, cost) and how do those factors affect the choice?
ii. Based on the identified factors influencing the demand, what is the expected demand of

child care services in Hong Kong?

Chapter 4 reports on the results of those estimates. The findings in this chapter will help explore a systematic and workable planning ratio, which can respond to the changes in child care services demand in the coming decades.

Objective 4

To advise on the service modes and the financing modes of day child care services with reference to the needs of different types of families, and other relevant considerations (including cost-effectiveness and sustainability), the consultant team addressed this objective by answering the following research questions:

i. Given the variety of service modes and financing modes identified in the international practices, how they are relevant and applicable to the context of Hong Kong?
ii. What are the culturally applicable changes to child care services that might increase cost-effectiveness and ensure sustainability of such services?

Chapter 5 summarises the findings from the examination, assessment, and exploration mentioned in Objective 4 above.

Based on the findings and insights collected over the entire research process, the consultant team derived recommendations for Hong Kong's child care system in nine areas, summarised in Chapter 6. These nine areas are as follow:

i. The service objectives, service contents, target user groups and planning parameters of aided standalone CCCs which are under the planning and regulatory control of SWD, including a review of the planning for centre-based day child care services which are substantially provided in Kindergarten-cum-Child Care Centres ("KG-cum-CCC"s);
ii. The relationship of CCC service, including standalone CCCs and KG-cum-CCCs, with kindergarten education;
iii. The manpower planning and training for child care staff, including child care workers and child care supervisors;
iv. The appropriate planning mechanism for centre-based day child care services;
v. The functions of NSCCP and MHCCCs and proposed changes to enhance the service quality and optimisation of the use of public resources;
vi. The appropriate service model(s)/mode(s) and financing mode(s) for different types of day child care services;
vii. The projection of the demand and supply of day child care services including government-subsidised and non-government-subsidised services, as well as the ancillary services, i.e. EHS and OCCS in the territory;
viii. The need for re-engineering and integration of different types of day child care services; and
ix. The role of Government vis-à-vis the private market in the provision of day child care services.

1.3 Data and methodology

The consultant team gathered the data mainly through four research activities as follows:

i. Conduct in-depth researches to review the relevant information from both the local and international contexts;
ii. Conduct stocktaking of the existing provision of day child care services in Hong Kong including government-subsidised and non-government-subsidised services;
iii. Conduct questionnaires through online and paper forms to solicit comments and experiences of service users and potential service users who are now on the waiting list, and non-service users; and
iv. Conduct focus group meetings, interviews with relevant stakeholders and governmental officials to collect opinions and concrete experiences on the provision, design, and financing modes for child care services.

The following sections of this chapter provide a brief description on the data collection and methods of the present study. A more detailed explanation on the methodology of data collection and data analyses are provided in the relevant chapters.

1.3.1 In-depth literature review

In-depth research was performed to review the existing philosophy and policy objectives of day child care services in Hong Kong. The consultant team collected relevant information from various sources, including government policy papers, research reports, past studies, government department articles and pamphlets, websites, as well as CCCs and KGs.

Literature on international experiences in developing and reforming systems from academic scholars, published reports, and commissioned country reports were also reviewed on six selected jurisdictions, namely Australia, Finland, Singapore, South Korea, Japan and Sweden.

These reviews helped the consultant team draw the implications for policy development in day child care services in Hong Kong.

1.3.2 Stocktaking

To fully understand the existing provision of day child care services in Hong Kong, a comprehensive stocktaking was conducted on both government-subsidised and non-government-subsidised services. With the collected information, geographical information system ("GIS") was used to analyse the geocoded service data, and spatial techniques were applied to maps, to summarise, explore and analyse the current service provision.

1.3.3 Questionnaires

To collect the views and opinions of users and non-users of day child care services, the consultant team compiled the data collected through questionnaires which consist of two sets of questions, one for users and the other for non-users. Separate questionnaires were designed for the six types of services, including CCCs, CCCs attached to KGs, OCCS, EHS, MHCCCs and the NSCCP. To capture a wider range of respondents, the questionnaires were conducted in e-format and paper form. With the collected data, statistical analyses were performed to address the research questions mentioned above.

1.3.4 Interviews with stakeholders

To elicit the stakeholders' views and opinions on the existing philosophy and policy objectives of child care services, one-on-one discussions with government officials and focus group interviews were carried out. The focus groups included service providers at the management level, service providers at the frontline level, as well as service users and non-users. In total, the consultant team interviewed 106 stakeholders. Comments were also received from the general public. Thematic analysis approach was adopted to analyse the data and to address the research questions and objectives mentioned above.

Chapter 2 The philosophy and policy objectives of child care services

This chapter provides an overview of the social welfare regimes to contextualise the diversities in policy approaches. The commissioned comparison study reports serve as case studies to demonstrate how the six different jurisdictions, namely Australia, Finland, Singapore, South Korea, Japan and Sweden, approach the development and reform their own Early Childhood Education and Care ("ECEC") systems. In this context, ECEC, also known as Educare, is a holistic concept comprising the intertwining components of care and education for children from birth up to the age of eight. In accordance with the age of the child and the situation, these components receive different emphasis. The main goal is to support children's interaction and expressive skills, as well as self-knowledge and responsibility through play and discovery, embarking their first step towards developing into a healthy individual. A more detailed explanation about ECEC is given in Section 2.2.1.

The consultant team reviewed the current child care policies and objectives in Hong Kong on several areas, including the rationale of child care services, human resources planning of child care services, training for child care personnel, and service and financing modes for different types of child care services. This assessment enabled the consultant team to understand their rationales and articulate a comparison of the six jurisdictions mentioned above to advise on how to bring the child care services of Hong Kong to the next level.

The consultant team addressed the following research questions in this chapter:
1) What are the existing philosophy and policy objectives of child care services in Hong Kong?
2) What guidance can the international experiences of child care services in the six selected jurisdictions offer to Hong Kong?

2.1 The existing philosophy and policy objectives of Hong Kong's child care services

The following section examines the current provision of child care services in Hong Kong from a historical perspective. It is divided into several sections, looking at different dimensions of child care services, ranging from the philosophy and policy objectives to specific operations.

2.1.1 Rationale of child care services

In the ***White Paper of Social Welfare into the 1990s and Beyond***, the overall philosophy for Hong Kong's social welfare was illustrated. First, Hong Kong, like other societies, accepts *"an obligation to assist their members to overcome personal and social problems and to fulfil their role in life to the optimum extent in accordance with the particular social and cultural development of their*

society"[1]. The responsibility to help those disadvantaged attain an acceptable standard of living is well recognised. The ***White Paper*** also states that "*the extent to which societies can meet these obligations depends very much on their system of values and the resources available"*.

Second, the means for discharging the obligation is through "*the provision of social services*", and child care service is one of these social services. Third, social welfare including laws, programmes, benefits and services, is to address the social needs and promote the well-being of individuals and groups *"in harmony with the needs and aspirations of their families and the community".*

Regarding child welfare services, the ***White Paper*** states that the overall objectives are "*to support and strengthen families so that they may provide a suitable environment for the physical, emotional and social development of their children and to provide assistance to those disadvantaged and vulnerable children who are not adequately looked after by their families*." From the early 1990s when the ***White Pape****r* was published till the present, Hong Kong's child care system has followed these objectives, addressing four main issues: 1) working mothers; 2) single parent families; 3) child delinquency and abuse; and 4) children being left unattended (neglected).

In the following section, the development of Hong Kong's child care system is briefly described, so that the readers can have a better understanding about how the child care services in Hong Kong are established step by step.

The Development of Child Care Services in Hong Kong

In the early 20th century, Hong Kong child care services, defined as services assisting parents who cannot take care of their young children because of work or other reasons, were almost non-existent. At that time, there were only non-governmental organisations ("NGO"s) providing care and welfare for orphans and neglected children.[2] After World War II, the demand for child care services increased significantly among the working parents, in part because many former residents of Hong Kong and refugees from the Mainland were flowing into Hong Kong.[3] During the period between 1960 and 2000, the number of child care centres rose tremendously, from eight centres for 920 children in 1959 to 401 centres for 47 365 children in 1999[4]. In 1975, the Hong Kong Government enacted the Child Care Centres Ordinance ("CCCO") and Child Care Centres Regulations ("CCCR") to regulate the standards in registration, operation and inspection of CCCs. After the implementation of the legislation, programmes were developed by the Government to upgrade the CCCs, including the infrastructure and training for child care workers ("CCW"s).

In the past three decades, the population structure of Hong Kong had undergone rapid and substantial changes. The number of mothers participating in the workforce was rising, the number of single-parent families arising from divorced families was increasing, and the number of

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[3] Wong, JMS and Rao, N, 2015, The Evolution of Early Childhood Education Policy in Hong Kong, International Journal of Child Care and Education Policy, Vol 9, Article No. 3
[4] Rao, Nirmala and Maggie Koong, 2000, Enhancing Preschool Education in Hong Kong, International Journal of Early Childhood.

delinquencies amongst the young was climbing. There was also concern about the incidence of child abuse and neglect. These phenomena attracted much attention from the public. Faced with these problems, child care services were designed to address the four main issues mentioned in the last section. At the time, the responsibility between the Government and family in child care was also defined in the ***White Paper*** that *"the primary responsibility for the adequate care for children rests with parents and the separation of children from their families should be tolerated only where there is no better other alternative"* [5], and that the Government only plays a supporting role.

The Government has introduced a variety of child care services in response to the changing environment and expectation from the public on child care services. There are six types of services, including centre-based child care services and volunteer-based child care services, i.e. standalone CCCs, CCCs attached to KGs, EHS, OCCS, and MHCCCs and NSCCP to support families and young children. To reduce parents' financial burden on child care, the Government has also implemented different forms of fee subsidy/reduction scheme. However, there is a continuous call from the public for the Government to do more to support child care by empowering parents and providing more options for parents to enter the workforce, to address the developmental needs of children and to provide better support for families in need.

In the next section, the changes in socio-economic and demographic profiles in Hong Kong will be presented to enable readers to understand why the current child care system cannot meet the rising demand resulting from the socio-economic and demographic changes.

2.1.2 Demographics in the labour force

Females and males in the labour force - On average, the female labour force participation rate gradually grew from 54% in 1980 to 71% in 2010 among the 34 Organisation for Economic Co-operation and Development ("OECD") countries (OECD, 2013). In Hong Kong, women's participation in labour force in terms of population has increased drastically in the past decades. However, as seen from Figure 2.1 below, the actual labour force participation rate of women in 1986 and 2010 had remained at a similar level at 50% and 49.6% respectively, and then rose modestly to 54.2% in 2016. The overall size of the female labour force grew significantly from 1 031 400 in 1991 to 1 865 000 in 2016, an increase of 80.8% (C&SD, 2017 p. 97), but it is clear that it masks the restrained growth in the overall rate of female participation in the labour force. Despite modest growth in Hong Kong, the female labour force participation rate is still lower than that for male, even though the male labour force participation rate showed an overall decline during the same period from 80% in 1986 to 70% in 2016.

[5] White Paper: Social Welfare into the 1990's and Beyond, March 1991.

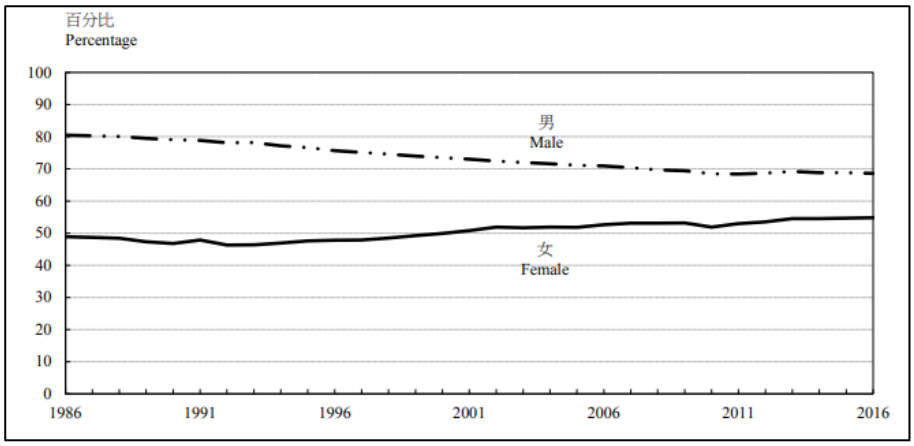


Figure 2. 1 Hong Kong – male and female labour force participation from 1986 to 2016[6]

Single-parent families and single mothers in labour force - Single parents are defined as either mothers or fathers who are never married, widowed, divorced or separated, living with a child or children under the age of 18 in the same household. If their child/children under 18 is/are not living in the same household, they are not counted as single parents. Figure 2.2 highlights how the number of single parents has declined in 2016 as compared to 2011, but shows an overall increase of 19.5% from 2001's number of 61 431 to 2016's 73 428. Single mothers continued to outnumber single fathers from 2001 to 2016; although the proportion decreased in 2016 with single mothers at 70% and single fathers at 30%, there are almost three times more single mothers than single fathers in 2006. Despite the increase in the labour force participation rate of single mothers from 59.3% in 2001 to 68.8% in 2016, the labour force participation rate of single fathers was still noticeably higher at 81.3% in 2016.

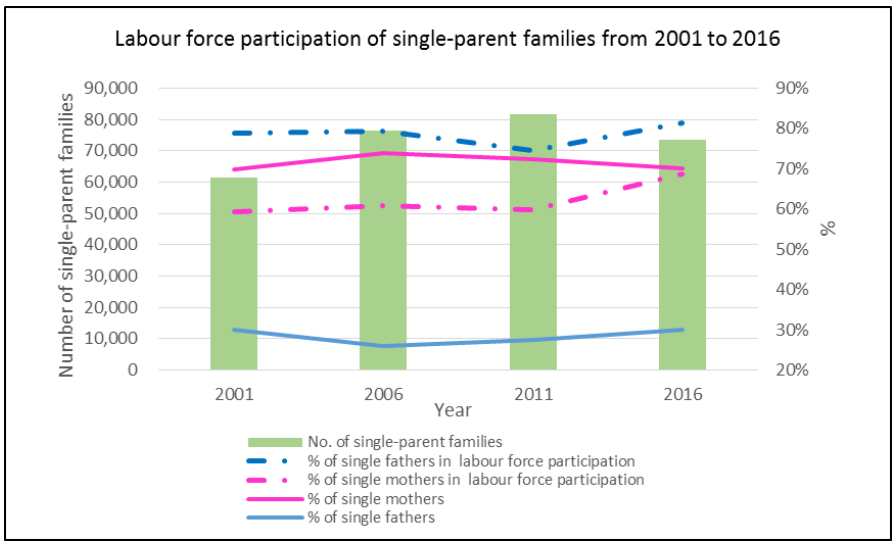


Figure 2. 2 Hong Kong – labour force participation of single-parent families from 2001 to 2016[7]

[6] Source: https://www.statistics.gov.hk/pub/B11303032017AN17B0100.pdf (p. 108)

[7] Source: 2011 Population Census Thematic Report: Single Parents, 2016 Population Census Thematic Report: Single Parents

Female labour force participation rate among married and non-married women - Figure 2.3 shows the group of women participating in the labour force by marital status. From 1986 to 2016 the labour force participation rate of *never-married* women is the highest at about 70%. The labour force participation rate of *now-married* women slightly increased from 42% in 1986 to 49% in 2001, and then to 52% in 2016. The *widowed/divorced/separated* group was the lowest the labour force participation rate among the three groups in the labour market, and are very likely to be an at-risk population.

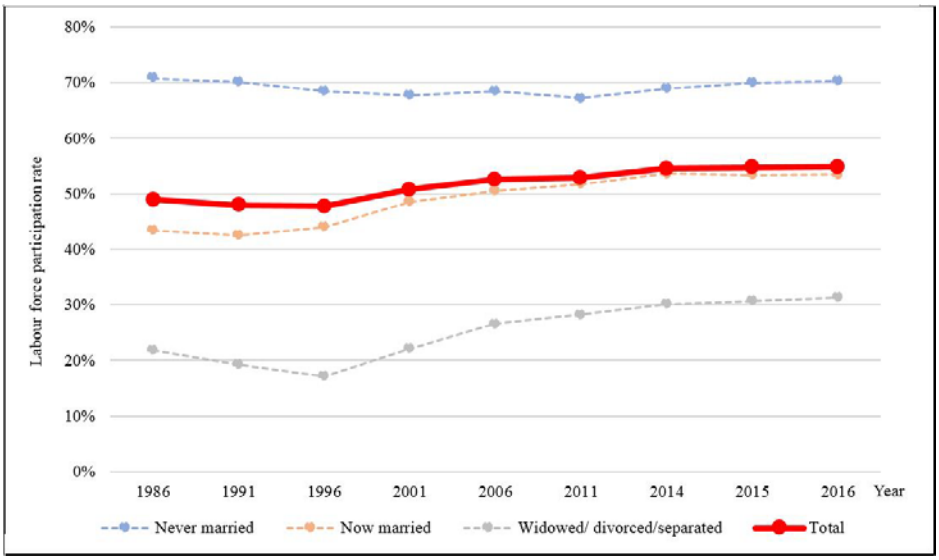


Figure 2. 3 Women's (aged 15 and over) labour force participation rate by marital status from 1986 to 2016, in Hong Kong[8]

Female labour force participation rate among mothers and non-mothers - Figure 2.4 shows the labour force participation rate of women of different ages, with or without children aged 0 to 6 in 2016. The *now-married women with children aged 0 to 6* and aged 20 to 49 had the lowest labour force participation rate. The *widowed/divorced/separated women with children aged 0 to 6* had the second lowest labour force participation rate. *The never married women without children aged 0 to 6* in all ages had the highest labour force participation rate. In general, the labour force participation rate of women with children is lower than that of women without children.

[8] Source: C&SD, 2017.

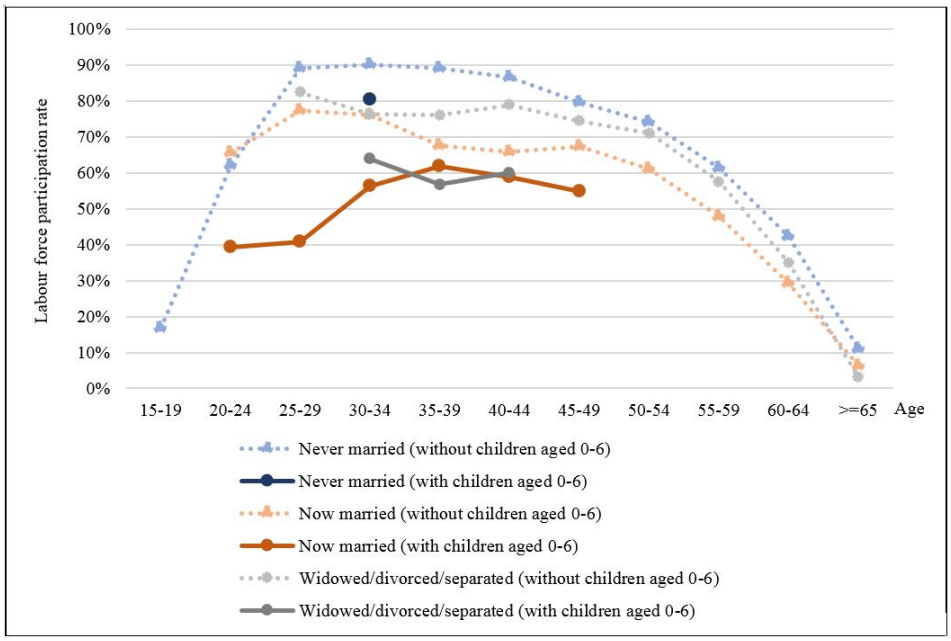


Figure 2. 4 Women's (aged 15 and over) labour force participation rate by age (5 years' interval), marital status and with or without children aged 0 to 6 in 2016[9]

Note: Data for *never married women (with children aged 0-6)* is only available for the age range of 30-34.

2.1.3 Service modes and Government spending on child care services

Service Modes

In the past, CCCs comprised of day creches ("DCs") for infants and toddlers aged under 2 and day nurseries ("DNs") for children aged 2 to 6 which were registered under the CCCO. KGs used to admit children aged 3 to 6 and are registered under the Education Ordinance ("EO"). In April 2000, the Working Party on Harmonisation operated by Education Bureau ("EDB") and SWD was formed to advise the Government on matters related to the goal of unification of practices between CCCs and KGs, in the light of government policies, societal demands, and developmental and educational needs of local children.

Prior to the implementation of harmonisation of pre-primary services in September 2005, SWD had planned for former DNs according to the planning standard of providing 100 subsidised day nursery places for every 20 000 persons of the general population under Hong Kong Planning Standards and Guidelines ("HKPSG"). For former DCs, relevant population was not used as the planning indicator on the expressed demand was used for reference. The above planning standard for DNs has become obsolete after the harmonisation of pre-primary services. According to the existing HKPSG, the provision of aided standalone CCCs[10], which are serving

[9] Source: C &SD

[10] Aided standalone CCCs refer to Child Care Centres receive subsidies from SWD.

children under 3, is based on the estimated demand, socio-economic factors, district characteristics and the provision of other child care support services for the area.

Since the harmonisation of pre-primary services in 2005, CCCs for children aged 0 to under 3 are regulated by SWD under the Child Care Services Ordinance ("CCSO") and the Child Care Services Regulations ("CCSR"), while KGs for children aged 3 to 6 are regulated by EDB under the EO. CCCs are more care-oriented while KGs are more education-oriented. KG-cum-CCCs receiving children aged 0 to 6 or 2 to 6, though governed by different ordinances, are provided with one-stop regulatory and monitoring services through the Joint Office for Kindergartens and Child Care Centres ("JOKC") staffed with officers from SWD and EDB and housed under EDB. The previously aided DNs (for children aged 2 to 6) and DN-cum-DCs (for children aged 0 to 6) under SWD have been converted to become KG-cum-CCCs and turned under the administration of JOKC since the harmonisation.

Today, there are six types of child care services which are grouped into two broad categories, namely, **centre-based child care services and volunteer-based child care services.** While details are given in Chapter 3, a summary of the services[11] is provided below:

1) Centre-based child care services

There are two main types of centre-based services providing care to children under the age of 3. The 27 ***Standalone CCCs*** provide child care services for children aged under 2 with only two service units also providing services for children aged 2 to under 3. The 517 ***CCCs attached to KGs*** with some provide full-day while others half-day child care services for children aged under 3. Most of the CCCs attached to KGs serve children aged 2 to under 3. The number of aided KG-cum-CCCs which are formerly aided child care centres remains at 246 since the harmonisation of pre-primary services in 2005.

The centre-based child care services also comprised of two ancillary services, ***OCCS*** and ***EHS.*** The OCCS was started in 1989 to provide a safety net for unattended children aged under 6 on full-day, half-day or two-hour sessional basis attached to aided standalone CCCs and aided KG-cum-CCCs within their operation hours for parents or carers with sudden engagements or various commitments. There are 214 service units operating OCCS. The EHS was started in 1988 by a NGO for children aged under 6 as a pioneering project, which provided longer hours of child care assistance to meet the needs of working parents. Like OCCS, EHS is also attached to aided standalone CCCs and aided KG-cum-CCCs. In 1994, SWD implemented the service by extending it in the then day creches and day nurseries. Then in 2015, to allow more flexibility in resources deployment, the Funding and Service Agreement ("FSA") of EHS was changed from unit-based to organisation-based, giving the service operators more flexibility in administering the distribution of EHS places with reference to the service utilisation in individual units. As at June 2017, there are 165 service units providing EHS.

2) Volunteer-based child care services

One of the two volunteer-based child care services is the ***MHCCCs***. There are 20 MHCCCs which are set up by non-profit-making local organisations, women's associations, church groups, etc. to serve children aged 0 to under 3 or 6 on a non-profit-making and self-financing basis. Children at

[11] Key figures of the six types of child care services were as at June 2017 provided by SWD.

the MHCCCs are looked after by volunteers, neighbours and/or parents of the mutual help child care group on a mutual help and voluntary basis. MHCCCs are exempted from the full set of registration requirements of the CCSO but they are still required to satisfy the safety requirements of children attending the centres.

Another volunteer-based child care service is the ***NSCCP.*** This service was piloted in October 2008, covering 11 districts and provided flexible forms of child care services for children aged under 6 to avoid them being left unattended in the community or neighbourhood. At the end of the 3-year pilot project in 2011, the NSCCP was regularised and extended to 18 districts while the age limit of the service users was extended to children from aged under 6 to under 9 in October 2014. The NSCCP offers two service components: home-based child care service and centre-based care group.

Government spending on child care services

The Government supports child care services through various financial means which is detailed in Chapter 3. In terms of total spending which comprises all pre-primary services, it has increased from HK$4,152 million in the 2013-14 financial year to the revised estimate of HK$7,199 million in the 2017-18 financial year with an increase in spending of 73%. The total government spending also increased by 9% from HK$433,500 million to HK$471,000 million for the same period. As Figure 2.5 shows, the Government is allocating more expenditure on pre-primary services which grew from 0.96% of total government spending in 2013-14 to 1.53% in 2017-18. In terms of percentage of GDP, the increase is from 0.19% in 2013-14 to 0.26% in 2017-18. The expenditure on child care services which is depicted below has consistently been lower than the expenditure on KGs by 2.6 to 3.4 times.

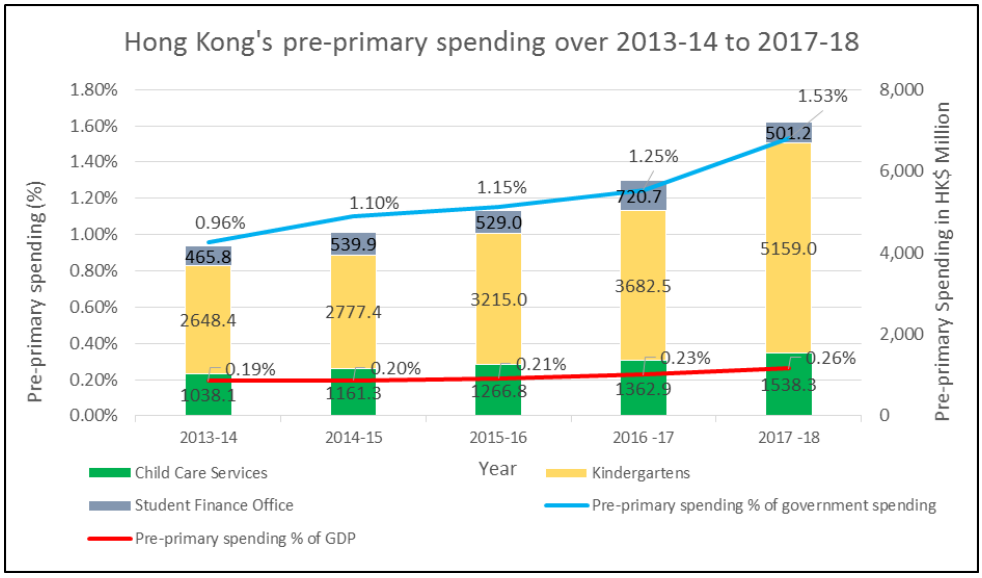


Figure 2. 5 Hong Kong's expenditure on pre-primary services from 2013 to 2018[12]

Note: Spending on pre-primary services includes – (1) Child Care Services, i.e. six types of day child care services, pre-school rehabilitation services and residential child care services; (2) KGs including the Pre-primary Education Voucher Scheme, new KG education scheme, refund of rents,

[12] Source: SWD 2018, C&SD and EDB

rates and government rents and others; and (3) subsidies offered by the Student Finance Office which include the Kindergarten and Child Care Centre Fee Remission Scheme, Grants for School-related Expenses for Kindergarten Students and others.

2.1.4 Human resources planning of child care services

The operation of all the CCCs, irrespective of being aided by the Government or not, standalone or attached to KGs, shall comply with the statutory requirements under the CCSO (Cap. 243) and CCSR (Cap. 243 A). There are prescribed standards for the service delivery in various aspects such as qualifications of child care supervisors, child care workers and staffing ratio for children, etc. For operational needs, CCCs are also required to employ other staffs, e.g. clerks for clerical work, cooks and helpers for cooking, cleaning and general duties in accordance with the Operation Manual for Pre-primary Institutions ("Operation Manual",『學前機構辦學手冊』). The number of supporting staff to be appointed depends on the operational needs of individual centres. The number and age of children, hours of operation, number of meals provided and the floor area of the centres affect the size of the staff establishment.

Table 2. 1 Qualified staff-to-child/teacher-to-pupil ratios

Service	Staff-to-Child/Teacher-to-pupil Ratios		
Age of Child	Age under 2	Age 2 to under 3	Age 3 to under 6
Child Care Centres	1:8	1:14	NA
Kindergartens	NA	NA	1:15* under EO 1:11*under the new kindergarten education scheme (the new KG education scheme) of the EDB

* The qualified teacher-to-pupil ratio for KGs joining the new KG education scheme was improved from 1:15 to 1:11 with effect from the 2017/18 school year. The minimum teacher-to-pupil ratio as stipulated in the EO remains unchanged at 1:15.

2.1.5 Qualification of staff in child care services

To be eligible for registration as child care workers or child care supervisors, the person must have successfully completed a training course approved by the Director of Social Welfare. Child care workers or child care supervisors are required to register in accordance with the CCSO. Information concerning the approved training courses offered by various tertiary institutes is disseminated via the EDB website:
(http://www.edb.gov.hk/en/teacher/qualification-training-development/training/index.html).

2.1.6 Training programmes of child care centres

Service operators of aided CCCs are required to deliver the service in accordance with CCSO and CCSR as well as the Operation Manual. For aided standalone CCCs, they are also required to

comply with FSA and Service Quality Standards ("SQS") to ensure service quality and facilitate the development of children. The Operation Manual and FSA include both components on child care and training elements of child development. The philosophy of early childhood education and care, defined as teaching and care to young children with a focus on learning through play and discovery, in which the Operation Manual provides guidelines for choosing furniture and equipment to cultivate children's interest in learning, stimulate creativity and learn naturally. The Operation Manual also provides sufficient guidelines to integrate both the concept of "care" and "education" to meet children's needs. In the context of early childhood education and care, education does not solely refer to solid brain knowledge, but also addressing the holistic development of children including their cognitive, emotional and social needs. Both the FSA and the Operation Manual highlight that the learning programmes should be designed with flexibility so as to cater for the developmental needs of children of different ages and strengthen their all-round-development through play. For example, singing nursery rhymes, playing with plasticine, toys, conversation etc. to develop their fine motor skills and sensory power. Besides, parent's participation is also important as their strong bonding with children is significant for their social and emotional development. To that, service operators are required to provide family support activities and encourage children to carry out what they have explored during daytime back at home with parents to facilitate parent-child bonding.

2.2 The existing philosophy and policy objectives of child care services in other jurisdictions

This section looks at the philosophy and policy objectives of child care services in other jurisdictions. Insights herein are provided from global experiences in developing and reforming ECEC systems from academic scholarship, published reports and commissioned country reports from six selected jurisdictions, namely Australia, Finland, Singapore, South Korea, Japan and Sweden. A summary of the commissioned reports of the jurisdictions is in Appendix 1.

Historically and globally, policies for the "care" and "education" of young children have gone separately, with different understandings of children's development, the role of family and state, and the fractured systems of governance (OECD, 2006). In particular, the rising demand for child care services is driven by the importance of high-quality care and educational service to children's development and well-being, changes in family composition, the growing number of one-parent families, female participation in the labour market, and the need to reconcile family and work responsibilities (OECD report, Chapter 5). As can be seen from the international comparisons which provide different examples of how to approach a unified system, this separation between care and education for children has been reduced in the 21st century.

2.2.1 Importance of care and education to children's development and well-being

ECEC often refers to providing teaching and care to young children from birth up to age eight, with more focus on learning through play and discovery. ECEC helps children to develop their attachment with the environment, their personalities and cognitive functions, etc. ECEC emphasises helping children develop holistically, addressing their physical, cognitive, emotional,

and social needs. Care includes nutrition, hygiene, safety and health, while education includes learning, participation, socialisation, and stimulation activities.

Over the past two decades, advances in the understandings of Early Brain Development ("EBDv") and Early Childhood Development ("ECD") have shaped policies related to ECEC in the global context. It has since been widely recognised that the care and education of young children are playing complementary roles to enhance EBDv and ECD.

Through a process of rapid and dramatic growth and development, an infant's brain reaches a quarter of its mature size by the time a full-term baby is born, half its mature size by 6 months old and 90 percent of its adults' size by the age of 8 years old (Gerhardt, 2015). The human brain is a unique organ in that its growth and development is not just dependent on food and nutrition, but the course that this development takes - especially in the first three years of life - depends heavily on experience as is shown in Figure 2.6 below. Early development, including the prenatal period and infancy, is critical to longer term life chances. In the period from two to three weeks post conception and to roughly two years of age, the nervous system itself is established and shaped by experiences (Gerhardt, 2015 p.11). Synaptic connections are formed during this stage in response to stimuli from the environment through the senses (e.g. eyes, ears, nose, tongue, and skin) (McCain and Mustard, 1999).

Different interconnected sections of the brain develop at different stages particularly during early childhood, and these sections are responsible for different abilities, skills and competencies (Gerhardt, 2015). The more connections there are, the better the performance and the greater is one's ability to use particular areas of the brain. These stages are critical periods of EBDv and Figure 2.7 illustrates the critical periods for some components of brain development and function. Critical periods are "windows of opportunity in early life when a child's brain is exquisitely primed to receive sensory input and develop more advanced neural systems, through the wiring and sculpting processes" (McCain & Mustard, 2011 p.24). In development areas, brain sensitivity peaks before the age of 3, including emotional control, social skills, language and numeracy (Gambaro, Stewart and Waldfogel, 2014, Naudeau et al, 2011).

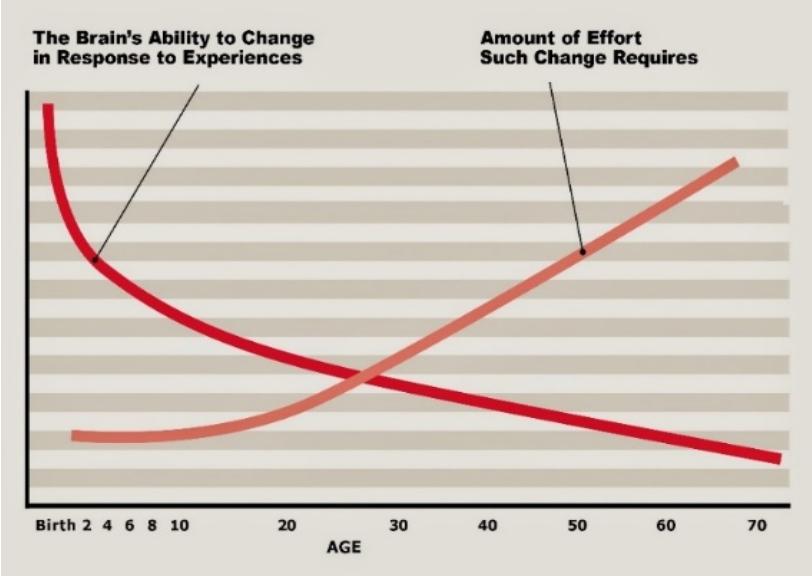


Figure 2. 6 Brain malleability

Source: Centre on the Developing Child, Harvard University 2017 (Levitt 2009)
Note: The vertical axis denotes the degree of neuroplasticity influenced by experience across lifespan and the amount of effort required.

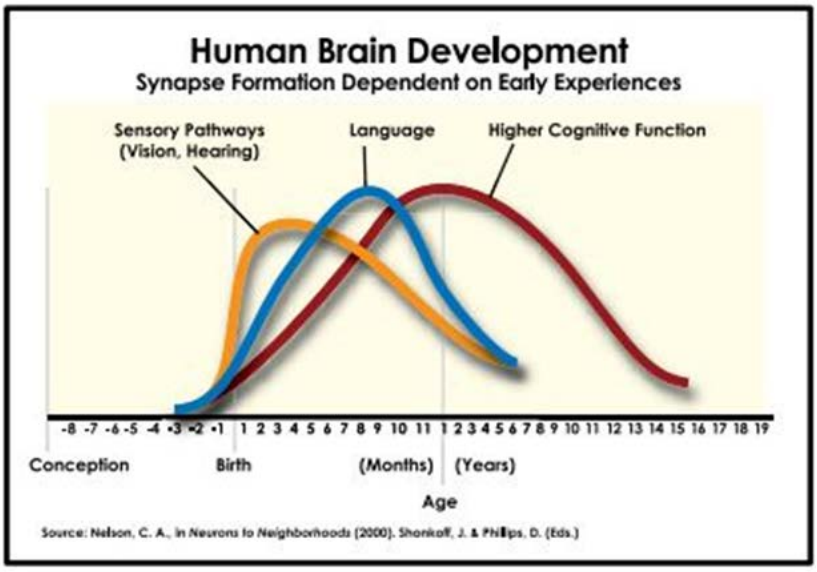


Figure 2. 7 Human brain development[13]

Note: The vertical axis denotes the rate of synapse formation for sensory pathways, language and higher cognitive function across childhood and adolescence.

ECD encompasses the physical, cognitive, linguistic, and socio-emotional development of a child from the prenatal stage up to aged eight (World Bank, 2010). ECD can occur across diverse

[13] Source: Nelson (2000) in Shonkoff & Phillips (eds), 2000

settings (e.g. homes, schools, health facilities, and community-based centres). It involves a wide range of activities (such as child care, nutrition support, and parents' education for children). Early childhood is a very critical stage which can lay foundations for children's well-being and learning. Positive experiences early on produce a more richly networked brain (Gerhardt, 2015). Thus, it should be emphasised that education does not only happen in kindergartens while care is not only limited to homes or child care centres. Early education and care should be integrated rather than separated. According to the American Academy of Paediatrics ("AAP"), "children's early experiences are all educational, whether they are at homes, with extended family and friends, or in early education and child care settings" (Donoghue, 2017). The failure of young children to realise their developmental potentials and achieve satisfactory education may lead to intergenerational transmission of poverty, thus imposing a long-lasting impact on economic growth and inequality of the society. It should be emphasised that babies and young children are very dependent on their living environment; and that exposure to high levels of "toxic stress" which might be caused by their carers and their surroundings will have a negative impact on their brain development and well-being (Gerhardt, 2014). Therefore, carers (no matter the parents, other family members, or child service providers in institutions) should be responsive, reliable, consistent, predictable, and ready to respond to children's signs of distress and discomfort (Gerhardt, 2015). Hence, the World Health Organisation has highly recommended that local, regional, and national governments should incorporate the science of ECD into policy formation for child care and education (Irwin, 2007).

To benefit child development and equity, OECD member countries have made effort to increase places in ECEC services. Data from the OECD Family Database indicate that the number of children under the age of 3 participated in ECEC has increased from 29% in 2006 to 35% in 2014 (OECD 2017). Different countries institute different types of ECEC services including centre-based and family day cares. The type of programme can be a full-day programme which is typically 5 – 6 hours a day, 5 days a week whereas part- time programmes have less number of hours per day or days. In general, full-day programmes are considered better for children's development and learning because longer days give staff a longer period to develop a more complete programme and children can be more involved. The full-day programme is also assumed to be more beneficial, particularly, for economically disadvantaged children (OECD 2018). Some countries adopt specific target measures focusing on children from disadvantaged background, others adopt universal provision.

The entry age and the duration of centre-based child care affect children's social and cognitive development as well as personality development. In Finland, 28% of children aged 0-2 year received formal ECEC service, for an average of 33 hours per week in 2013 (OECD, 2015). In Australia, about 31.4% of children aged 0-2 received approved child care services for about 23.8 hours per week in 2012 (Australian Government, 2013). The existing research in the US has suggested that the greatest cognitive gain is for children who start receiving centre-based child care service at the age of 2-3 rather than at younger or older ages, while the negative behavioural effects are greater the younger the start age (Loeb et al, 2007). A report from the Sutton Trust argues that the "fundamental role of the parent [is] not only as the first teacher but [also] as the first caregiver and provider of love and security." The parent-child bonding, and specifically a high- quality bonding, "supports the child's social and emotional development," which affects the 'bigger picture' - the child's "cognitive development and ultimately their life chances" (Moullin, Waldfogel, & Washbrook, 2014). It would be most beneficial for the child if both these functions worked together in the supportive stages, in particular, during the "first year when the baby's brain

doubles in weight" and "burst of brain development when attachment bonds are made" between six to twelve months (Moullin, Waldfogel, & Washbrook, 2014). As such, it is vital not to miss this crucial period for the child to be cared from a home care setting and then transitioning into enrolment in professional ECEC services for the remainder of the pre-primary years. This also helps with maintaining a consistent level of care, as there are positive inputs by both parents at home, and caregivers at child care centres. An Australian study (Yamauchi & Leigh, 2011) has found that compared to part-time child care services, full-time centre-based child care service (more than 20 hours per week) in children's early years was associated with higher level of parental-reported difficulty temperament.

Implications for Hong Kong **-** In Hong Kong, close to 100% of children aged 3 to 6 attend KGs, and while it is not mandatory for children to attend KGs, KGs are provided on universal basis by the Government. There are parents who choose to care for their children at home, up to the entire six years before compulsory primary education. About 55%[14]of children aged 2 to 3 are cared by CCCs. However, for children aged 0 to under 2, up to 1.6%[15] of the population use CCCs and up to 0.9%[16] use the volunteer-based child care services. With long waiting list for CCCs, some parents may choose to resign from work and care for their children themselves, others may arrange to have a foreign domestic helper to assist in child care while they continue to pursue their careers, still others may enlist the support from relatives. However, some parents believed that only CCCs can provide high-quality child care for their children and that care by qualified carers would benefit children's development in the long term.

Recapturing the AAP's statement that "children's early experiences are all educational, whether they are at homes, with extended family and friends, or in early education and child care settings"(Donoghue, 2017), child care provided at home-based and in centre-based setting are equally important. It is paramount that parental care is acknowledged as the foundation of a child's development. The term "child care" in this report not only refers to the traditional understanding of centre-based child care services, but it also encompasses the care and nurture manifested through parents especially when the child is very young. To repeat from the Sutton Trust report, parental care and bonding is necessary for children's holistic development. In addition, according to the existing US research, negative behavioural effects are greater if children receive centre-based child care services at an age earlier than 2, which can aggravate the parent-child bonding (Loeb, 2007), thus best care achieved during a child's young age would be parental care. However, due to short maternity leave, current limited options available to the public and long waiting list at aided CCCs, most parents are obliged to arrange child care on their own; i.e. with the support from foreign domestic helper, grandparents and other extended family members or volunteer-based care, which are highly unlikely to be uniformed in quality.

Short-term and long-term positioning **-** Under this current state, the consultant team on one hand, urges the Government to do more by providing more options of quality child care to support children and families; and on the other hand, acknowledges that there is difficulty for the

[14] Based on CCCs places (for children aged 2 to under 3) of 28 842 available for a population of 52 780.

[15] Based on CCCs places (for children 0 to under 2) of 1 831 available for a population of 111 240.

[16] Based on information from SWD 2018, for NSCCP, children aged 0 to below 2 are only eligible to use home-based child care service ("HCCS"). As such, number of NSCCP places is 39 HCCS places x 18 service unit = 702 places. For volunteer-based child care services, total number of places for children 0 to under 2 is 702 (NSCCP) + 275 (MHCCCs) = 977 for a population of 111 240.

Government to provide sufficient child care places to address the service demands in the short term. Hence, the positioning of child care services in the short term should be upon enhancing the importance of parental role in child care to the public as well as strengthening the existing practices through upgrading the qualification/training for all carers including parents, extended family members, foreign domestic helpers and child care service staff including volunteers at the neighbourhood. To enhance the role of parents, one area that can be improved is to increase paid leave for both parents, and supplement with educational opportunities for parents on child-rearing skills (i.e. workshops held at community centres or hospitals), and increase intervention programmes for families needing support. Although the Government and social institutions should provide as much support as necessary, at the end of the day it is up to parents to create the close attachment with their children, which is unique to each family. Therefore, it is also important to balance out the effective provision of professional centre-based child care services, with adequate parental leave, in order to give parents the opportunity to have quality attachment and bonding time, through a period of home care. The above-mentioned evidence illustrates how this time for parental care has a positive impact on the development of the child, and is certainly as important as the child care and education they receive at the pre-primary level.

In terms of long-term positioning, it would be most beneficial for the child if both parental care and child care services support from the Government can achieve a balance in the supportive stages, from a home care setting and then transitioning into enrolment in professional care services for the remainder of the pre-primary years. This also helps with maintaining a consistent level of care, as it consists of positive inputs by both parents at home, and caregivers at child care centres.

2.2.2 Changes in family composition

The above section has highlighted one of the key policy objectives in child care services in international practices and achieving high-quality child care in Hong Kong, that is, optimisation of child development and well-being. In this section, another policy objective is reviewed in response to the changes in household composition. Table 2.2 shows the distribution of family composition in the early 2010s in Australia, Finland, Singapore, South Korea, Japan, Sweden and Hong Kong. As seen, compared to the three western jurisdictions, i.e. Australia, Finland and Sweden, *households with couples with children* are the most common type of households in Singapore, South Korea, and Hong Kong, accounting for 56%, 37.0% and 39.4%, respectively, but *single parent households* is also relatively high in proportion at about 13.1%, 9.2% and 11.9%, respectively. Japan, Finland and Sweden have relatively lower proportion of *single parent households* at 2.6%, 5.5% and 6.6%, respectively.

Table 2. 2 Distributions (%) of family composition by household types in 2010/2011

	Households with couples					
	Sub total	With children	Without children	Single parent households	Single person households	Other household types
Australia[(a)]	56.9	31.0	25.9	10.4	23.9	8.7
Finland[(b)]	49.4	20.5	28.9	5.5	41.0	4.0
Singapore[(c)]	69.8	56.0	13.8	13.1	12.2	4.9
South Korea[(c)]	52.4	37.0	15.4	9.2	23.9	14.5
Japan [(d)]	46.8	16.6	30.2	2.6	34.5	16.2
Sweden [(b)]	52.2	24.3	27.9	6.6	36.2	5.0
Hong Kong[(c)]	54.4	39.4	15.0	11.9	17.1	16.6

Source: OECD family database
Note: (a) For Australia, children are defined as those of any age who live with their parent(s) and as long as they do not have a partner or children of their own living in the same household. (b) For Finland and Sweden, children are defined either as dependent resident children under 25 or as all children under 25. (c) For Singapore, South Korea and Hong Kong, children are defined as unmarried children of any age. (d) For Japan, children refer to unmarried children under the age of 20.

Table 2.3 shows the family composition by the number of children (aged under 6) in 2016 from the latest census in Hong Kong. In 2016, there were 322 180 households with at least one child (aged under 6), 75.4% of which are 1-child households, and 23.4% are 2-children households, while only 1.2% are 3-or-more-children households. It should be noted that at present, there are 22 320 (6.9%) lone parent with children aged under 6 and this group would be most in need of child care support from the public, especially those lone parent households with two or more children.

Table 2. 3 Number of households with children aged under 6 in Hong Kong, 2016

	No. of children aged under 6			
Household types	1	2	3+	total
Couples with children aged under 6	154 740	52 580	2 940	210 260
Lone parent with children aged under 6	17 660	4 420	240	22,320
Couples with at least one of their parents and children aged under 6	29 800	9 320	400	39 520
Others with children aged under 6	40 580	8 960	540	50 080
Total	242 780	75 280	4 120	322 180

Source: C & SD
Notes:
1. "Household" is including those with other unrelated persons, e.g. foreign domestic helpers, which is slightly different from C&SD's definition of "domestic household".
2. “At least one of their parents” refers to parents of the couple.

In Hong Kong, over the period of 2001-2016, the number of nuclear family households has increased from 1 358 920 to 1 605 646 (an increase of 18.1%); the number of single-parent families

has risen from 61 431 to 73 428 in the same period (an increase of 19.5%, as shown in Figure 2.2); and the labour force participation of parents is also very high. These phenomena suggest that 1) relying on intergenerational support may neither be adequate to satisfy the demand for child care nor is a preferred and practical choice for parents; and 2) there will be more and more parents, whether from single-parent family or otherwise, resorting to the outside-home child care services.

2.2.3 Rise in female labour force participation

In the past decades, female labour force participation rates have increased tremendously across all developed jurisdictions. On one hand, this signifies the important role of women in the labour market and public sphere; on the other, it has reflected great challenges which many families will face, that is "who will look after the children when parents are at work". Partly due to the rise in living costs as well as the aspiration of women with education attainment level to build meaningful careers, the traditional model that families are supposed to take the responsibility of caring for their children and mothers should look after them full-time while fathers work outside to provide financial support, does not meet the current challenges.

Table 2.4 and Figure 2.8 show that in the seven western and eastern jurisdictions, women are playing a very important role in the labour market, with the highest labour force participation rate of about 90.6% amongst Singaporean women aged between 25 and 29 to the lowest rate of about 50.6% amongst Korean women aged between 20 and 24. It is even more interesting to note that in Australia and Finland which have higher fertility rates, female labour force participation rates have managed to remain at high levels across age groups or even increase with ages, and in places with universal child care service such as Sweden, an overall female labour force participation rate at 85% or above has been maintained across three age groups (25-34,35-44, and 35-39); in contrast, in all four Asian jurisdictions, namely in Singapore, South Korea, Japan and Hong Kong, across the age range of 30 to 39, there appears to be a significant drop in the female labour force participation rate. This seems to be much related to different family policies, especially child care policies in the seven jurisdictions. Somehow, women with young children in Asian jurisdictions have to make a choice of staying at home looking after their children or continuing to work outside. In Finland, early childhood education and care arrangements are considered to belong to the basic and universal social services provided by the Government. According to the latest statistics in 2016 (THL 2017), in Finland, given such universal and easily available child care services, about 83% of the children aged between 1 and 6 attended in municipal ECEC centres while only 7% children attended private ECEC institutions and 10% were in family care. In Australia, the Government has very strong commitment to make sure that all children have access to "a quality early childhood education programme" and makes sure that ECEC service to be as flexible as possible to align with the changing working patterns of parents, thus parental, especially maternal, workforce participation can be maintained. With continuous improvement made by the Swedish Government, the well-being of children is supported through the ECEC universal child care policy plus providing options for mothers to pursue their career rather than being tied down by child rearing. The drop in female labour force participation rate after the age of 30 observed in Hong Kong, South Korea, Japan and Singapore indicates that many women leave the labour market when they marry or give birth to children within the traditional Asian culture and mentality. The transition to marriage and to parenthood has interrupted their working life and led to retreat from the work-place. This interruption and retreat are related to the gendered division in housework

and care, the limited access to good child care services, inadequate support for the re-employment of women after marriage and childbirth, and inflexible working arrangement (Kang, 2017).

Table 2. 4 Female labour force participation rates by age group in seven jurisdictions, 2016

	Age group					
Jurisdiction	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**
Australia	69.1	71.9	70.4	70.4	74.8	76.5
Finland	60.0	68.5	68.7	75.6	82.4	83.7
Singapore	62.0	90.6	85.3	82.3	80.2	77.2
South Korea	50.6	69.5	60.2	56.5	62.8	68.6
Japan	71.6	81.7	73.2	71.8	75.7	78.5
Hong Kong	61.9	83.6	74.9	69.1	69.6	70.9

	Age group				
Jurisdiction	**20-24**	**25-34**	**35-44**	**45-54**	**55-64**
Sweden	70.1	84.9	90.6	89.9	76.9

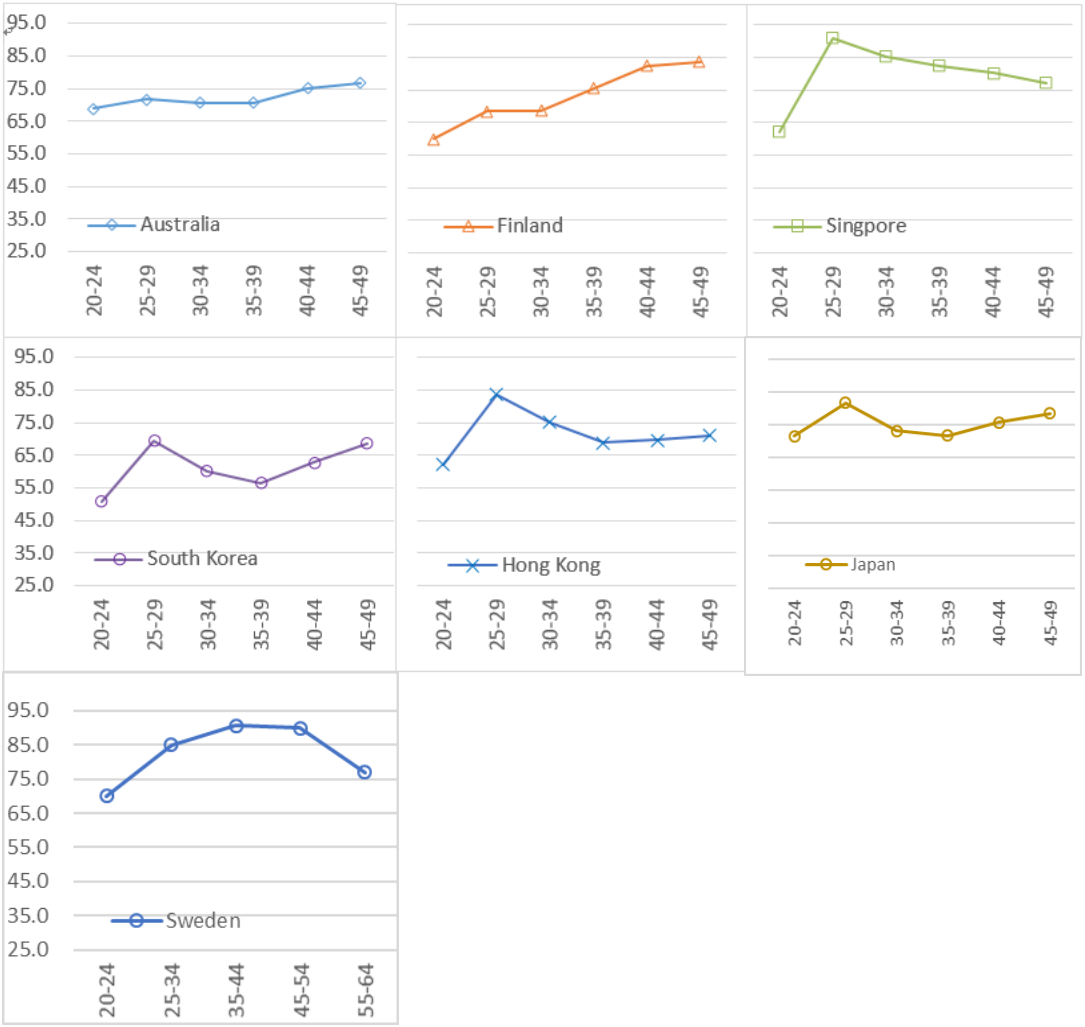


Figure 2. 8 Female labour force participation rates by age groups in seven jurisdictions, 2016

Implications to Hong Kong- As the Government of Hong Kong only plays a supporting role in child care services and does not have a universal child care scheme, as seen in Figure 2.8, there is a significant drop in Hong Kong's female labour force participation rate for the age range of 30-39, where the transition from young adult to marriage or parenthood is of high occurrence. In this transition, Hong Kong resembles the three other Asian jurisdictions - South Korea, Singapore and Japan, where the conservative attitudes towards family-work roles and gender stereotypes are still being endorsed by the public, and women's primary duty is for caring of children and husbands and doing household chores (Tang, 2016). And with increasing financial and social pressure, women tend to be involved in multiple social roles but ended up having a difficulties in balancing domestic work, child care and workforce demands, where then most of them retreat from the work place. In contrast to the western countries such as Finland, Australia and Sweden, social roles are blurred in context within Asian culture where work only serves as a utility for family benefits, that family roles remain as the centre among all social roles (Tang & Tang, 2001). Furthermore, as explained in the above, Hong Kong does not provide universal child care or financial remuneration to support women not in the labour workforce as in western countries. These research findings have important policy implications in terms of child care, if the Government of Hong Kong is to implement more options in child care service provisions in the long term, it would allow a better work-family balance for women and enhance the flexibility in terms of their choice of focus (i.e. work versus family). Currently in Hong Kong, the female unemployment rate from 2015 to 2017 for age 20-49 is low, at 3.4%, 3.3% and 3.1%, of the total Hong Kong population (male and female), for the 3 years respectively (Census and Statistics Department). Therefore, if full-time housewives were allowed to join the labour force, they would not have difficulties in finding employment as the unemployment rate is not high. With more government support in child care whether in the form of service provisions or monetary support, this would smoothen the transition of women from marriage to parenthood and allow themselves to fulfill both social and familial duties.

2.2.4 Underlying welfare regime and philosophy behind the child care policies

A welfare state broadly refers to how a government promotes, supports and/or offers social protection, a safety net for its citizens. Currently, the welfare state regimes have been classified into four types, namely the liberal system, conservative-corporatist system, the social-democratic system, and the productivist system (Esping-Andersen, 1990; Holliday, 2003). This study tries to explore the child care policies in Australia, Finland, Singapore, South Korea, Japan, Sweden and Hong Kong under the theoretical framework of the welfare state regime and see how these regimes shape the configuration of the ECEC systems in those seven jurisdictions. Why is it important to link the ECEC with the welfare regimes? It is important because the features of the social welfare regimes can determine the types of interventions likely to be or have been present in ECEC, and are predictive of what reforms would be acceptable and feasible within a given country or jurisdiction.

Table 2.5 shows some features of the four welfare regimes and highlights the specific regimes, to which the seven jurisdictions belong. As shown, Australia belongs to the liberal system, with targeted measures and middle tax burden; Finland and Sweden belong to the social-democratic system with universal access to social benefits but high tax burden; Singapore, South Korea, Japan and Hong Kong, all belong to the productivist system, with social policies serving predominantly economic growth.

Table 2. 5 The four types of welfare regimes[17]

	Liberal[18]	**Conservative-corporatist**[19]	**Social-democratic**[20]	**Productivist**[21]
Types of benefits	Means-test/ targeted	Social insurance	Universal	Social policy subordinate to economic growth
Purpose/ Goal	Labour market activation	Familiarisation traditional gender roles	De-familiarisation/ autonomous individual rights	Familialistic tradition maximisation of economic productivity
Tax approach	Middle tax burden	High tax burden	High tax burden	Low to Middle/varied
Examples	Australia, U.K., USA	Continental Europe	Scandinavia (e.g. Finland, Sweden)	East Asia (e.g. Singapore, South Korea, Japan and Hong Kong)

Under the framework of the different welfare regimes, the philosophies behind the child care policies were examined. The importance of child care and education for children aged 0 to under 2 is being recognised increasingly, as mentioned above by AAP, that children's early experiences whether at home or in centre-based settings are all educational. Furthermore, factors such as the changes in family composition, and the rise of female role in the labour market, would all contribute to the variance in the approaches to address the increasing demand for child care services among the seven jurisdictions, which have quite different welfare regimes.

In Finland, the rights of children are emphasised. Finland's new ECEC Act 2015 approaches ECEC from the perspective of the child, it is the right of a child to receive education and care, in support of child development and growth. Children are entitled to a full-time day care place irrespective of their parents' employment status. Therefore, the core of "child's right" underlying the child care policies reflects the important feature of "autonomous individual rights" in Finland's social democratic regimes. In Sweden, socio-economic changes have been driving the Government to provide quality care and education for the overall development and well-being of children. Under the same principle, the right of children is being emphasised. The aim of the central government and the municipalities is "to support and stimulate the child's development and learning and contribute to good conditions for growth" through the provision of universal high-quality pedagogical activities (Ministry of Education and Science in Sweden, 1999, p.9).

[17] Sources: Esping-Andersen, 1990; Holliday, 2003

[18] The liberal welfare regime is based on market performance, believing that the market rewards those work hardest, and bring most personal freedom and prosperity to the society. This regime is characterised by means-tested programmes and very few universal benefits.

[19] The conservative corporatist model is with aim of maintaining social order and status, by providing much support to traditional family and preserving the male breadwinner model.

[20] The social-democratic model is based on universalism, emphasises on the social rights of the entire population. The granting of benefits depends on the needs rather the socioeconomic performance or status.

[21] In the productivist welfare regime, social policies are subordinate to the economic policies and serve to maintain the economic growth, social stability and peace.

In Australia, however, child care services are designed with more intention to help working parents. The main objective of the Government spending is to support parental workforce participation. The Government has been planning to introduce "a world-class system of integrated early childhood learning and child care" designed to boost national productivity, lift labour force participation, and step towards an "education revolution". Australia's ECEC system has included many tests, such as means-test and activity test[22]. All these child care measures reflect the features of Australia's social liberal system.

In Singapore, the "pro-family" and "family values" are frequently and heavily referred to as rationales and stance for child care support. The child care policy is seen as a part of the family policy package, and this whole package is implemented as efforts to cope with demographic shifts, political pressure, and the economic downturn. In South Korea, the Ministry of Health and Welfare which oversees the daily care facilities, put child care support with other pronatalist measures to ameliorate the demographic crisis and the potential economic problem that will arise in the near future. In Japan, the child care system is also designed to serve different purposes, including to alleviate the burden on working mothers and single parents as well as to address child abuse problems. Therefore, Singapore, South Korea, and Japan indicate that their child care policy is shaped by their welfare regime namely productivist system.

Implications for Hong Kong **-** Under Hong Kong's current welfare regime and philosophy towards child care services, it is unlikely, and certainly impractical, to implement the "child's right" philosophy of Finland and Sweden, where no matter what the family employment situation is, children are entitled to full-time day care places. However, the Government of Hong Kong can increase the number of centre-based child care places and offer support for needy families to receive quality child care services. Australia is similar to Hong Kong in that the child care subsidies offered are means-tested. Hong Kong can also implement a second level of checks similar to Australia's "activity test", to gauge how many hours of subsidised child care services should be provided, based on the number of hours the parent(s) work. Resources can be more effectively distributed to those with greater social need. This is paired with Australia's larger integrated policies package, which increases the financial support for families to pay for child care (co-payment). Hong Kong may consider learning from this system and implementing more flexible policies that also help with economic development, as increased flexible child care provision empowers parents with the opportunity for further skills development and education attainment, which is important for sustaining the labour force and society-at-large (Australian Government, 2015). The idea of 'family values' is as important in Hong Kong as is in Singapore, and is part of their family policy package. Hong Kong can learn from this and integrate child care provision with other social welfare policies, such as expanding intergenerational care and providing longer paid parental leave. Although Hong Kong adopts a productivist welfare regime, it can transition into a society where social policy is increasingly for social development, instead of just for economic growth, just like Japan, where child care policy aims to mitigate child abuse and relieve working mother's burden. A balance should be found between providing social support and developing the human capital/skilled manpower essential for boosting the economy and enhancing the well-being of the population.

[22] A test that specifies who is eligible for the assistance of Early Care and Learning Subsidy, which is based on the hours of work undertaken by the parents. Exemption exists for those who cannot meet this criteria and are allowed to access 36 hours of ECEC services per fortnight (Department of Education and Training, 2018)

2.3 Comparing the system in Hong Kong with the six international jurisdictions

2.3.1 Integration with other related policies

After reviewing the child care systems in the six international jurisdictions, namely Finland, Australia, South Korea, Singapore, Japan and Sweden, it is found that the child care policy is sometimes embedded in a wider family policy package. Some governments, like Singapore, offer baby bonus, medical insurance for newborns, paid maternity leave, and parental leave, child care subsidies, tax arrangement, co-payment and so on. Table 2.6 shows the various measures implemented in the seven jurisdictions.

As shown in Table 2.6, Finland, Singapore, South Korea and Sweden have universal child care subsidies, while Australia and Hong Kong have more targeted measures, (the former targeting low-income families and the latter targeting those entering non-profit-making kindergartens). Japan is also aiming for both universal child allowance for children up until junior high school as well as targeting low-income families. It is however necessary to mention that from July 2018 Australia has replaced universal Child Care Rebate ("CCR") with Child Care Subsidy excluding those families with annual earnings above AU$350,000. The change took place because it was argued that this subsidy is simpler than the previous multi-level subsidy system, and targets low to middle income families requiring more financial assistance. From a government perspective, this new policy would help save money and subsidies would be provided more effectively based on the means tests. From the perspective of parents, however, the response will likely to be mixed as it may benefit low to middle income families more with higher subsidies, but overall families would not automatically get subsidies; the previous system automatically gave CCR if both Child Care Benefit ("CCB") and CCR were applied for, no matter if CCB was approved or not (Department of Education and Training, Australian Government, 2018). With regard to the tax arrangement, Australia, Singapore and Hong Kong provide some tax reduction for parents. As for co-payment, except for South Korea, all the other five jurisdictions offer some co-payment to reduce the child care cost of families. Regarding paid maternity and parental leave however, there are great variations: Hong Kong provides the shortest leave; in contrast, Finland provides the longest paid leave for mothers to care for their children with an additional flexibility where the paid leave can be shared among the mother and father.

Table 2. 6 Comparison of the specific measures implemented by the seven jurisdictions

	Australia	Finland	Singapore	South Korea	Japan	Sweden	Hong Kong
Pre-primary Subsidies	Means-tested Child Care subsidy	Universal Home Care Allowance	Universal Basic Subsidy	Universal Child Care Supplement	Facility-type Benefit paid directly to the ECEC facility by the government for the child that is attending	Central government and local municipalities pay 93% of ECEC costs, and the remaining 7% is paid by parents.	For service operators[23] - CCCSS, SME and/or SOE for CCCs
Tax arrangements	Family tax benefit	---	Tax rebate for parents, increase with the number of children	---	N/A	N/A	Child tax allowance
Personal income tax[24]	45%	52%	20%	38%	56%	57%	15%
Co-payments	Income based parent co-payments (highest earners excluded from subsidy)	Income based parent co-payments ranging from 0 to maximum, based on family structure	Income based (means-tested), parent co-payments above basic subsidy	---	Full or partial fee waived for low income families	Fees according to family income but capped at a maximum of 7% for parents to pay. The maximum monthly fees cannot exceed 157 USD for the first child, 105 USD for the second child, and 52 USD for the third child, with enrolment of a fourth child being free.	Full or partial fee waived under the Kindergarten and Child Care Centre Fee Remission Scheme for children from low income families receiving full-day child care service with social needs; fee subsidies for eligible service users of other day child care services such as the EHS, OCCS, MHCCCs and NSCCP
Maternity/ paternity/ parental leave	18 weeks paid maternity, 2 weeks paid paternity or eligible partner leave	17.5 weeks paid maternity leave; 143.5 weeks paid parental and home care leave	16 weeks paid maternity leave; 4 weeks paid parental leave	12.9 weeks paid maternity leave; 52 weeks paid parental and home care leave	14 weeks of maternity leave followed by 12 months of parental leave (14 months if both parents take it together)	68.6 weeks of parental leave paid at 80% of salary, and can be shared between both parents	10 weeks paid maternity leave[25], 3 days paid paternity leave

[23] Subsidies for kindergartens are excluded from this table.

[24] Personal income tax rate: The highest statutory marginal tax rate applied to the taxable income of individuals. https://home.kpmg.com/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/individual-income-tax-rates-table.html. Tax rate may vary according to income. Japan's tax rate per the commissioned report expert is more likely to be 45%.

[25] Per Policy Address on October 10, 2018, maternity leave is revised from 10 to 14 weeks among civil servants with immediate effect. For the general public, the maternity leave at 14 weeks bill will be tabled in late 2019 and passed before July 2020 (SCMP 2018).

As seen from the table above, there are several different tax rates and generic policy dimensions that need to be considered in the design and reform of an ECEC system such as income eligibility limits, co-payments by families, reimbursement rates to providers, subsidy applications and eligibility processes, and supply-demand ratios (e.g. the use of waiting lists) (Adams, Snyder & Sandfort, 2002; Blau, 2001; Meyers, Heintze, & Wolf, 2002; Blau & Tekin, 2001; Levy & Michel, 2002).

As for the child care subsidy, Australia, Finland, Singapore and Japan apply different means-tests to determine eligibility based on family income thresholds. Higher income eligibility limits are likely to appear in the potentially eligible population. As for parent co-payments, one rationale behind higher co-payments is that requiring parents or carers to contribute may encourage greater accountability and help to meet policy goals in promoting self-sufficiency (Blau, 2001). In addition, higher co-payments may enable the provision of smaller subsidies to a larger proportion of an eligible population. Thus, a higher co-payment could result in an increase in the number of subsidy recipients overall; but on the other hand, higher co-payments could contribute to a reduction in observed subsidy receipt for lower income families who may be "priced out" of participation in a subsidy programme due to costs (Schulman & Blank, 2004). Hence, recognising the complexity of co-payments, Sweden has capped the maximum fees required to be paid by parents at 7%, and the maximum fee decreases as the number of children increases in the family, up to the fourth child where no fees have to be paid, applicable to both municipally and non-municipally run services. Finland implements a sliding scale for family co-payments. In Finland, income limits differ with family size. In brief, for a family of four persons with a monthly income lower than €2,395 (HK$23,275), there would be no fee for ECEC. If the income is above €5,724 (HK$55,600), fees are €290 (HK$2,800) for the 1st child and €232 (HK$2,250) for the 2nd child for full time care. As for maternity leave, the longer the leave, the better for the health of the child; it has been found that an additional week of maternity leave in industrialised countries will reduce the infant mortality rates by 0.5 deaths per 1000 lives (Winegarden and Bracy, 1995).

Implications for Hong Kong **-** Considering all the measures implemented in these jurisdictions, it can be seen that a multi-pronged and integrated approach to support comprehensive family and child policy is often adopted to enhance the quality of child care with focus on child development and support to young families. Yet, as a jurisdiction with a low tax regime, it might not be feasible for Hong Kong to fully adopt the welfare state philosophy whereby the Government takes up the full responsibility of providing quality child care services for all children. At least there is a need to examine the provision and what areas need to be improved to mitigate the current shortage of child care centre service to children, especially for the age group of 0 to under 2. Thus, the current situation in Hong Kong still has gaps to close.

At present, owing to being dual income earners for meeting their financial needs and/or single parents, some parents in Hong Kong simply cannot perform their child care duties. Furthermore, parents ought be given a choice and be supported in whether to choose to stay at home and resume work after giving birth to their children. However, the unique situation in Hong Kong should be taken into account. Hence, in this regard, it is worthwhile for Hong Kong to consider some policy measures from jurisdictions such as Japan, Singapore and South Korea which have some similar population demographics, Asian family cultures and values, and fertility rates.

Nonetheless, Hong Kong should bear in mind the challenges that other jurisdictions have faced with regard to their child care measures. Until very recently, Australia, with the transition to a

new Child Care Subsidy, had two different child care subsidy programmes, one being the CCB and the other CCR , where CCB applicants automatically and immediately received CCR, no matter whether CCB is approved or not. This policy however faced criticism, that the Government could be giving financial aids to families who may not need it. In Finland, there is also criticism that education is prioritised over care in terms of ECEC, leading to rural areas not receiving enough child care services. Critics are calling for both education and care services to be balanced and equally distributed to all children regardless of geographic location. In Japan, since the announcement of free nurseries and kindergartens were made, there have been criticisms regarding the poor use of resources as removing fees for day care has not addressed the social issues of day-care shortage and shortening the long waiting lists. It has been argued that money and resources should rather be spent on increasing the number of facilities, locations, and staffs to fulfil the high demand.

2.3.2 Public investments in services and infrastructures

The supply of child care services is strongly linked with government commitment and investment. Structural arrangements of child care services (such as capacity, quality of care, training of staff, and access to the economically disadvantage children), can be improved if the Government can increase its financial support.

The Government financial investment in the seven jurisdictions in terms of the proportion of GDP expenditure on ECEC is compared in this section.[26] Figure 2.9 shows that among the seven jurisdictions, Sweden had the highest percentage of GDP expenditure in ECEC of about 1.6%; next to Sweden is Finland, it had 1.1% of its GDP in ECEC, in which 0.6% was spent on child care while 0.5% on pre-primary education; next to Finland was South Korea, with 0.9% of its GDP in ECEC, 0.6% of which was also on child care. For Singapore, the public expenditure in ECEC was only about 0.01% in previous years. The Singapore Government had noticed the rapidly increasing demand for child care places as more and more parents realised the importance of pre-school[27] education in child's development, and more and more others returned to work. Therefore, the Singapore Government had increased the expenditure up to 0.2% of its GDP in 2017. Such significant increase of Singapore's expenditure in child care and education reflected the Government's commitment to enhance its child care system. The Prime Minister of Singapore, Lee Hsien Long, said "We want every child to go to a good pre-school, so that all children, regardless of family background, have the best possible start in life" (The Straits Times, 2017). In terms of ECEC spending as percentage of government spending, Sweden remains at the top with 6.20% government spending on ECEC, South Korea the second highest with 5.90%, Finland the third with 4.53% and Australia at 3.78%, whereas Singapore and Japan's data were unavailable. Among the seven jurisdictions, the percentage of GDP expenditure on pre-primary education/services in Hong Kong was only 0.19%, with 0.13% on the pre-primary education while only 0.06% on child care services. In terms of percentage of government spending, Hong Kong stood at 2.0%.

[26] The term ECEC is consistent with OECD family database for Finland, South Korea, and Australia. However, in Hong Kong it is known as 'pre-primary,' and education and care are separated.

[27] The term "pre-school" is used in each country's context to maintain its originality. In Hong Kong's context the term "pre-primary" is used. Both terms generally mean before primary school for children.

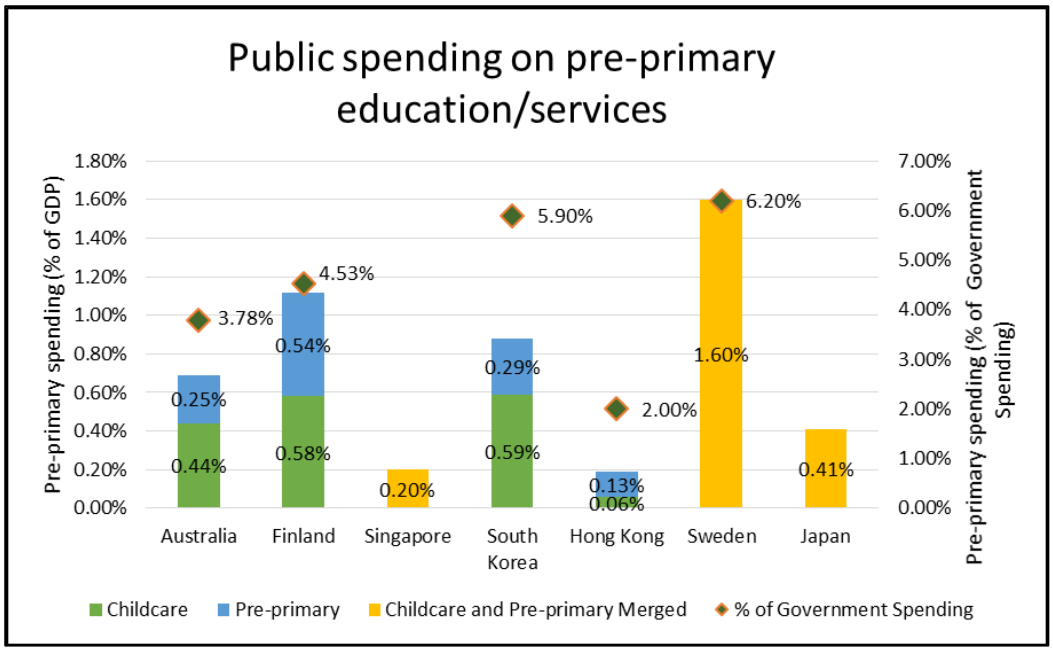


Figure 2. 9 The percentage of GDP and government's spending on the pre-primary education/services

Sources:

1. OECD, "public spending on child care and early education"
2. https://www.theglobaleconomy.com/rankings/government_spending_dollars/
3. The World Bank

Notes:

a. The year of public spending of pre-primary education/services is 2013, except for Singapore. The data for Singapore refer to expenditure in both child care and pre-primary schools in 2017, and the government spending is unavailable.
b. Data for Australia, Finland, South Korea, Sweden and Japan are from OECD Family Database in 2013.
c. Data for Japan government spending is unavailable.
d. Government spending = Total spending by all levels of government but excluding public enterprises.

However, as shown in Figure 2.5, the Government of Hong Kong has increased its spending on pre-primary education/services over the period of 2013-2018. The spending on child care services has risen from HK$1,038.1 million to HK$1,538.3 million, an increase of 48%, while the spending on kindergarten education has increased more than child care services, from HK$2,648.4 million to HK$5,159 million. In 2017-18, the percentage in terms of government expenditure reached 1.53%, and the percentage of spending on pre-primary education/services in GDP has reached 0.26%, but still it is much lower than Australia, Finland, South Korea and Sweden. Currently, the spending in kindergarten education is more than 3 times of the spending in child care services. The consultant team is aware that kindergarten education in Hong Kong is provided on universal basis whereas child care service is not, hence the higher spending on kindergartens. But this illustrates that the Government of Hong Kong has the capacity to increase the spending on child care services if it deems necessary.

Implications for Hong Kong **-** After comparing the Government's financial investments in pre-primary education/services, it can be seen that at present, Hong Kong falls behind the other six jurisdictions. If Hong Kong Government can increase its budget in child care services and spend it effectively and efficiently, the situation of inadequate supply of quality child care services in terms of human capital and learning environment can be improved. Specifically, it will be beneficial to the children if the Government can consider increasing its spending on child care services.

Hong Kong should take note of the efficiency in terms of child care financial support and distribution that are, or have been present, in other jurisdictions. In Singapore, prior to the spending increase on child care services in 2017, quality pre-schools was generally expensive and was usually not affordable for low-income families. There was criticism that not enough government subsidies to support high-quality child care provision. Since the expenditure has increased to 0.2% of its GDP in 2017 and spending on where needs are, much has improved in Singapore.

2.3.3 Quality improvement and assurance

In recent years, in South Korea, Australia, Singapore and other OECD countries, a strong focus on enhancing the quality of child care underscores the significant concerns in the overall quality of the child care system. Although varies across jurisdictions, it is however well recognised that the governments of Australia, Finland, Singapore, South Korea, Japan and Sweden provide high-quality child care in different areas, but overall places are limited and they have long waiting lists, categorically demonstrating a lack of capacity/supply in them. Despite the concentrated focus on improving quality and the relatively well compensated ECEC workforce, it is also recognised that there is variability in the quality of care provided. Although evidence suggests that the quality of teachers in the middle and upper end child care and kindergarten facilities is quite high, however, this also suggests the likely presence of variability, especially in the lower end facilities.

In terms of the quality of care, the structural characteristics, such as staff-to-child ratios, education and qualification of staff, are relatively easy to legislate and monitor. Table 2.7 compares the staff-to-child ratios. It clearly illustrates the position of Hong Kong on staff practice in the international context. As shown, the staff-to-child ratios are noticeably different and the older the children, the ratio gets larger. For the care of infant aged 0 to 24 months, Australia, Finland, South Korea and Japan have a much lower staff-to-child ratio than Singapore and Hong Kong (1:8), whereas Sweden has no central regulation on the staff-to-child ratio. For the care of toddlers aged 24 to 36 months, the ratio in Hong Kong is 1:14, two to three times higher than Australia and Finland. In Hong Kong, for kindergartens where children are over 36 months, the improved ratio under the new kindergarten education scheme of EDB is 1:11, but for child care centres for children aged 24 to under 36 months, the ratio is 1:14. Overall, Hong Kong seems to be far behind other jurisdictions, while Finland so far has the most favourable staffing ratio.

Scientific research on whether lower staff-to-child ratios benefit child development is mixed. Some researchers have argued that as staff can spend more time interacting with each child individually, there are inherent positive child development outcomes. However, researches have also shown that staff-to-child ratios may have little-to-no effect on how the child turns out, and that it is more important to focus on continually improving staff training and quality of services (Perlman, et al., 2017). Moreover, the recent meta-analyses by Perlaman, et al (2017) reviewing

over 29 studies (31 samples) on staff-child ratios showed the current "permissible by licensing regulations" range from 5 to 14.5 preschool-aged children of 30 to 72 months per adult. They concluded that within the range, better ratios are not related to better outcomes for children.

However, there is strong evidence showing that lower staff-to-child ratios promote the health and safety of young children, as the fewer number of children that each staff member is responsible for, the more attentive the staff can be to each child's needs, and be aware of the overall environment thus reducing the child's exposure to dangerous situations. It also reduces the likelihood that staff become overstressed or overburdened from having too many children to take care of at the same time. Additionally, lower staff-to-child ratios during the early-years of child care have been associated with boosting social, interpersonal communication, and cognitive skills, for the future development of the child (Miranda, 2017).

Therefore, Hong Kong should strive to lower its staff-to-child ratio, but at the end of the day, the professionalism and quality of education and care provided by staff is the most significant factor in the development of the child, and should be prioritised first.

Table 2. 7 ECEC staff-to-child ratios

	Australia	Finland	Singapore	South Korea	Japan	Sweden	Hong Kong
Infant aged 0 to 24 months	1:4	1:4	1:5 (aged 2 to 18 months) 1:8 (aged 18 to 30 months)	1:3	1:3 (aged 0 to under 12 months) 1:6 (aged 12 to under 24 months)	No central regulations, depends on each municipality and varies. Ratio is typically 1 adult to 5 - 6 children, by 2016 average at 1: 5.2.	1:8 (aged 0 to under 24 months)
Toddler aged 24 to 36 months	1:5	1:4	1:12 (aged 30 to 36 months)	1:8	1:6		1:14 (aged 24 to under 36 months)
Older than 36 months	1:11 (no more than 1:12.5)	1:8	1:15 (aged 36 to 48 months)	N/A	1:20 (aged 36 to under 48 months) 1:30 (aged 48 to 60 months)		Children start entering kindergarten at the age of 3.

Source: Hong Kong SWD; Individual Commissioned Country Reports; International Perspectives on Childhood Education and Care; OECD 2012.

Apart from staff-to-child ratios, there is also consensus on the importance of guidelines for standards of care and training programme for ECEC children aged 0 to 8. South Korea, Australia, Finland and Sweden have provided good examples for Hong Kong to learn and improve on.

In South Korea, the Nuri or 'world' curriculum was formally instituted in 2012. It is a child-centred play based curriculum written with the guideline that it can be implemented flexibly between 3 to 5 hours each day, depending on the needs of the students and the institution (KICCE, 2013). It aims to integrate early childhood education and child care systems in Korea, as well as ensuring a standardised quality regardless of the type of ECEC services. The Nuri curriculum is designed to promote holistic development of children in five key areas, including physical exercise, health, communication, social relationship, artistic experience and nature exploration. It was implemented for all five-year-olds in 2012, and was subsequently expanded to child care centres for three and four-year-olds in 2013. Further details on the curriculum can be found in the country summary in Appendix 1.

Australia, however, has developed the Early Years Learning Framework to ensure that their children receive high-quality child care and education in their early childhood setting. As it describes, the framework is for their belonging, being, and becoming, so that the children can live a fulfilling life, have time to play and try new things and have fun, and form their sense of identity from an early age. This framework is not a "curriculum", rather, it provides parents, carers and educators with an overarching guide to learning and development in the years from birth to the age of five. Early childhood education and child care providers also use this framework to design and deliver their early learning programmes. Application of *Belonging, Being, and Becoming* concepts in child care services for the aged 0 to 3 focuses on encouragement, involvement and support learning in babies and toddlers. For the concept of *Belonging* for example, teachers stress the importance of greeting and saying goodbye to children and families by name, and involving children in daily routines and allowing children to help such as moving a mat. The concept of *Being* is about valuing children as human beings in the present rather than who they will become in the future. Providing children with space and time to dream, to relax, have fun and just enjoy themselves under safe condition but still under supervision. For the concept of *Becoming*, the focus is on learning in the environment and interaction, being tidied, organised and setting up the environment again when it becomes messy after play.[28]

In Finland, a key task of the ECEC is to support the children's holistic growth, development, well-being and health from the age of 0-6 before primary education. ECEC also has an important role in promoting lifelong learning as well as equity and equality. The curriculum guidelines emphasise language development and the joy of learning. Thus, playing, physical activities, artistic experiences, self-expressions, and explorations should be taken into account in planning and implementing activities and be used as guiding principles in the interactions with children. For the well-being of children, it also emphasises the importance of cooperation and partnership between the staffs and parents. Specifically for children below the age of 5, performance requirement is not expected, rather children's own interests and needs serve as indicators to guide the content of education. An individual ECEC plan is drawn up for each child, done together with the staff and parents, taking into account of the child's experiences, interests and strengths, as well as needs and guidance. The ECEC staff is expected to observe and document the child's

[28]http://www.earlychildhoodaustralia.org.au/nqsplp/wp-content/uploads/2013/09/NQS_PLP_E-Newsletter_No63.pdf

development. Implementation of the plan is monitored and assessed regularly both among staff and parents through regular meetings and questionnaires.[29]

In Japan, the curriculum frameworks for the aged 0-5 are separate, kindergartens for the aged 3-5 focus on pre-primary education, day nurseries for the aged 0-5 focus on child care and child welfare and the integrated ECEC centres for the aged 0-5 focus on both education and child care. While the government develops regulations and disseminates the roadmap of education policy on basic curriculum, teachers are given the freedom on what, how and when to teach the materials. Parents are also involved in ensuring the goal of care and education is carried out and supported in child care.

An important part of the pre-school curriculum in Sweden involves the fundamental democratic value which are care and consideration towards others, solidarity, equality and responsibility. Since 1998, the national curriculum lists five goals: 1) norms and values, 2) development and learning 3) children's own influence 4) cooperation between pre-school and home, and 5) interaction with the pre-school class, compulsory school and the leisure-time centre. The central government sets the standards and guidelines and the 289 municipalities are responsible for the implementation of these goals. The day to day activities and programmes are designed and collaborated between the ECEC centres and parents. The central goal is to build the foundation for lifelong learning, and in the pre-school setting the main theme is to learn through play. For example, pre-schoolers learn the concept of math and science through play which involves different shapes, colours and patterns in a game of matching and building different sizes of blocks with an aim to developing the notions of order, size and quantity.

Implications for Hong Kong on qualified staff-to-child ratio - While there are mixed reviews on the exact universal staff-to-child ratio, the trends in other jurisdictions suggest that Hong Kong ought to improve its manning ratio to be closer to the jurisdictions reviewed. At a first step, Hong Kong should consider improving the qualified staff-to-child ratio especially for the youngest children aged 0 to under 2 which is a critical period of child development, and especially for those in child care centres. The current ratio of 1:8 should be adjusted to, at least 1:6 by reviewing the ratios of other jurisdictions. By drawing reference to the teacher-to-pupil ratio in kindergartens, the staff-to-child ratio for age 2 to under 3 in CCCs should be changed to 1:11. For the longer term, the manning ratio should be further improved.

Nonetheless, in order to implement change successfully in terms of improving staff to-child ratio and, the provision of infrastructure support in terms of providing and sustaining qualified child care staff need to be considered. For example, the change of staff-to-child ratio might abruptly need more child care workers who might not be available in the community. Hong Kong should take note of the challenges experienced in South Korea, Finland and Sweden. In South Korea, specifically, due to sudden demand for child care services manpower, obtaining the minimum qualification requirement as Grade 3 child care instructor was compromised. The normal 1-year training programme became a 2-week online course and passing an easy exam (Emery, 2017). This led to poor quality in child care staff that was detrimental on child development and the well-being of children. Despite Finland having the most favourable manning ratio among the jurisdictions reviewed, however in some ECEC centres, there is still lack of workers with

[29]https://eacea.ec.europa.eu/national-policies/eurydice/content/assessment-early-childhood-education-and-care-other-pre-primary-education_en

qualification of a pre-school teacher. In Sweden, while the staff-to-child ratio is not regulated, the practiced ratio by each municipality is about 1 staff to every 5 to 6 children. When staff take sick leave, sometimes more than 17 children under the age of 3 are left with just 2 or even 1 staff member for several hours (Himmelstrand, 2015). One solution the Swedish have taken to resolve this problem is merging smaller groups of 40 children and six to seven staff together and then separate them again into smaller groups during certain times of the day. These larger groupings mean that the teams of staff can be more flexible and children are less vulnerable if one of the staffs takes sick leave.

Implications for Hong Kong on programme quality **-** Compared to the six jurisdictions where the education and care (i.e. ECEC) has been adopted, the philosophy of Hong Kong's child care services as stipulated in the 1991 **White Paper** is mainly care-oriented. However, as evolved, currently in practice elements of ECEC are regulated in the aided CCCs addressing the need for a holistic development programme. However, these are restricted to aided CCCs and programme implementation in non-aided CCCs is not informative. Thus, the training programme in all CCCs (aided and non-aided) should be reviewed and standardised, drawing references from global practices, and make amendments, if warranted.

However, the consultant team recognises that a basket of factors, such as cultural background, for instance in terms of cultural differences, the Hong Kong society are more competitive and keen towards "winning at the starting line" as discussed previously, whereas Finnish society focuses on the children's own interest as the core driver of the education content and performance are not assessed for children below the age of 5. Another cultural distinction lies within the responsibility of child-rearing. In Finland and Sweden, both father and mother share the parental leave to take care of the infant and they are equally responsible on this matter; but in general mothers in Hong Kong have been given a higher expectation to stay at home to take care of their children. The change of paternity leave and allowing flexibility of parents to taking leave might work well in Finland and Sweden but it might take time to widely be practised in Hong Kong.

It is however important to emphasise that the learning programme for children below the age of 3 is not about academic training in writing and learning. The programme guidelines are about to create an environment and/or programme activities for children through play and exploration. For example, in Australia, all the activities and programmes are being orientated into the 3Bs, namely, "belonging", "being" and "becoming". It is how these philosophies can be crystallised into activities by paying more attention to child development and constructing a tailor-made programme for each child, allowing the participation of parents in child care services. Thus, different stages of development ought to be taken, and also the implications of other quality factors, for example, the staff-to-child ratios. It is therefore recommended that developmental elements can be incorporated into the training programme of all CCCs, not only as a general guideline as stated in the Operation Manual or FSA but with more detailed references to each age group, for example activities for age 0 to 1 specific to sensory power etc.

In summary, Hong Kong should have regards to the drawbacks in the service quality of other researched jurisdictions. This includes South Korea, where their Universal Child Care Scheme has low public opinion, as the people have questioned the quality of services in those facilities. There is an overreliance on the private sector to provide child care services in South Korea, and this has led to trifold issues, namely 1) poor teaching quality, 2) sometimes children are treated poorly, and 3) poor food quality. In Australia, based on the service used, the quality of services however can

differ and there is criticism that teachers have a lot of administrative and clerical duties that taking away their time in teaching. Therefore, Hong Kong should take these lessons learnt from the experience of other jurisdictions into account as guidelines to how many child care workers and support staff be hired, and what specific duties they should have. For service performance monitoring and financial control, the Government should review if there are processes and procedures that could be streamlined.

2.3.4 Training and working conditions for staff

Whether in child care centres or at home, the qualification and training of child carers have great influence on the quality of care. Quality inputs support good quality learning environments that foster children's development and well-being. Structural factors such as manning ratios and qualifications of staff, as well as process factors, including relationships and interactions between child carers and children are both important contributors to high-quality ECEC (OECD, 2015).

Table 2.8 compares the requirement of child carers in the seven jurisdictions. As shown, Australia, Finland, South Korea and Sweden have quite high requirements for staff working directly with children as well as for other staff. In Finland, one in three of the staff in ECEC centre must have a higher education degree composed of at least either a Bachelor's degree from a university or a degree from polytechnical school and in South Korea, as of 2013, about 25% of the child care workers have completed 4-year university education and the percentage could be higher at present. In some elite centres in South Korea, more than half of the teachers are even required to have master's degrees and doctoral degree but these could be privately run and cost would be higher. In Sweden, all qualified day care attendants are restricted to work only as an auxiliary worker in all ECEC workplaces, where their main role is to support the pre-school teachers, who have completed 3 1/2 year specific pedagogical trainings in a university. Further, it is noticed that parents in Australia, Finland, Singapore, and Hong Kong often resort to child carers and foreign domestic helpers for child care. Apart from Hong Kong, the other three jurisdictions also have set some education and training requirements for child carers and foreign domestic helpers.

Implications for Hong Kong - The Government can incentivise child care services operators to raise the bar for professionalisation of child care services and incorporate some child developmental elements into the training programmes of child care centres. This includes employing staff with more knowledge on the contemporary knowledge of child development and learning, raising an awareness of the impact of their behaviours on brain development, equipping home child carers with more specialist knowledge of infants and toddlers, and providing opportunities for further training for child care staff as well as child carers. The quality improvement of child care staff should also be accompanied by the improvement of the salary structure and career development. To date, indeed the Government has tried to achieve the above objectives through implementing In-service Staff Training Subsidy to all CCCs from the 2007/08 school year to the 2010/11 school year and further extended from 1 January 2013 to 31 December 2015, as well as providing additional resources i.e. Subsidy for Manpower Enhancement ("SME") which are recurrent allocations for all CCCs for a better remuneration for qualified CCWs in order to attract and retain them in light of the new KG education scheme implemented by EDB with effect from the 2017/18 school year. It is hoped that through these initiatives in place that the quality of child care staff can be retained. At the same time, a sense of professionalism should also be nurtured and

developed in the whole sector for future development. Further, the provision of education opportunities among the tertiary institutes should be made available to ensure that enough supply of high-quality personnel is in the service. At the same time, the career prospect, the remuneration, and the working conditions are important for attracting and retaining CCWs in the service. A stable supply of CCWs in CCCs is critical to the development of the young generation.

Hong Kong should exercise caution so not to face the same issues that other jurisdictions have experienced. In Finland, in some areas, qualifications of child care staff are still generally low, with some workers do not hold a teacher's certification. Their salaries and associated low working class status together with unclear career prospect, affecting the morale, service quality and the number of new recruits. Hence, reasonable pay, benefits, and promotion opportunities should be provided to ensure the provision of child care services. Singapore has similar issues with high staff turnover, due to widely varying salaries and benefits between different centres. Some NGO-run centres lack the necessary funds, it is hard for them to hire good teachers and offer them with competitive employment packages. There is also a public image of child care workers being unprofessional, and are sometimes seen as being "babysitters", thus leading to less people choosing this field as their career.

Table 2. 8 Requirements of child care givers in the seven jurisdictions

	Requirement of staff in service centres	Requirements of home child carers
Australia	At least 50% of the educators in a service hold or are working toward their diploma; at least one qualified early childhood teacher; majority of the paid primary contract staff have the relevant formal qualifications either with a diploma or an advanced diploma or a Certification III or IV.	Approved and registered in Australia's Home Education association.
Finland	One third of the staff must have a higher education degree; a KG teacher must have a bachelor's degree in education or social science; other staff have at least a vocational upper-secondary qualification in social welfare and health care.	Family child minders working in family day care should have suitable education and competence-based qualifications for family child minders.
South Korea	In many day-care facilities, the child care workers have minimal (Grade 3) certifications, 58% have Grade 1 certification and 25% have 4-year university education. In other more elite facilities, more than half of the child care workers have master's degrees and doctoral degrees in child studies.	N/A
Singapore	5 "O" level credits including a pass in English language and a Diploma in Pre-school Education – Teaching.	Foreign domestic workers must have a minimum of 8 years of formal education and possess the necessary educational certificates as documentary proof of their education.
Japan	Kindergarten teachers or nursery teachers receive two years of training programme (tertiary level), followed by an induction programme (all public kindergartens and most private ones).	N/A
Sweden	Pre-school teachers undergo three and a half years of pedagogical training at university. Day-care attendants require upper-secondary qualifications (a 3-year programme).	N/A
Hong Kong	Higher Diploma in Early Childhood Education qualification. Registered in accordance with the Child Care Services Ordinance, Cap. 243.	Home-based child carers under NSCCP must complete a training course provided by respective service operator. The training components include child care skills and knowledge, home safety, etc.

2.3.5 Systematic monitoring and regulation

How child care services are monitored, regulated, integrated by different departments are other important aspects to be considered. In this section, how monitoring and regulations are handled in other six selected jurisdictions are reviewed.

In Finland, the Ministry of Education and Culture has the overall responsibility for early childhood education and care, including pre-primary education. The Finnish National Agency for Education, operating under the Ministry of Education and Culture, is the national expert agency responsible for the development of ECEC and pre-primary education. It issues the national core curricula based on municipalities and other providers (please refer to Finland Country Report in Appendix 1.1).

In Australia, there are several departments responsible for different dimensions of child care services. Responsibility for ECEC in Australia is split between the commonwealth (national) and the state and territory (regional) governments. At the federal level, the Department of Education and Training is responsible for overseeing training and regulatory arrangements, and the Department of Human Services is responsible for funding mainstream ECEC services for children below school age. However, it should be noted that a large proportion of the costs of ECEC are paid by parents (OECD, 2016). The Department of Education works with the state and territory governments usually under their respective departments of Education to regulate and monitor approved services. The Australian Children's Education and Care Quality Authority ("ACECQA") oversees the implementation of the National Quality Framework and is responsible for assessing the quality of services (please refer to Australia Country Report in Appendix 1.2)

In Singapore, the Ministry of Social and Family Development ("MSF") and the Ministry of Education ("MoE") together managed the CCCs and KGs, respectively. But in 2013, a unitary Early Childhood Development Agency ("ECDA") was established to "serve as the regulatory and developmental authority for the early childhood sector in Singapore, overseeing key aspects of children's development below the age of 7, across both kindergartens and child care centres". The ECDA is jointly overseen by the MoE and the MSF, and it is hosted under the MSF.[30] All the public kindergartens are under the regulation of MoE (please refer to Singapore Country Report in Appendix 1.3).

In South Korea, two different departments oversee the care for the younger children and the education for older children. The Ministry of Health and Welfare oversees day care facilities that serve children aged 0 to 3 while the Ministry of Education overseas KG care and education for children aged 3 to 5. This gives rise to differences in budgets, teacher qualification and working environments. Kindergarten teachers are generally considered to be more qualified than day care teachers (please refer to South Korea Country Report in Appendix 1.4).

In Japan, the Ministry of Health Labour and Welfare ("MHLW") regulates day nurseries, while the Ministry of Education, Culture, Sport, Science and Technology ("MEXT") oversees kindergartens. Both agencies, under the supervision of the Cabinet Office, share oversight over the integrated centres for ECEC. Despite having three offices overseeing the care and education system in Japan,

[30] https://www.ecda.gov.sg/pages/aboutus.aspx

there are no specific plans for the Japanese Government to merge the regulatory powers of the separated ministries and office, one possible reason is due to the rapid expansion of 220 000 new day care places, which made it extremely difficult for the government to further restructure the regulatory offices as this would require long-term adjustments and implementations, pioneer against the long-historical offices which could further hinder achieving the short-term goal. The possibility of unifying regulatory offices into one could only be made possible if deficient child care centres were being resolved (please refer to Japan Country Report in Appendix 1.5).

In Sweden, in 1996, the Ministry of Education and Science took over the early childhood education and care responsibility from the Ministry of Health and Social Affairs. It was a direct response to their prime minister's vision for the country to "become a nation of knowledge"[31]. The transition was to ensure that there is consistency and holistic child care and education, well-educated and professional staff, thoroughly designed and well-resourced centres, and in valuing children highly as individuals. The personnel change at the ministerial level had simply moved the team working on pre-school from the Ministry of Health and Social Affairs to the Ministry of Education and Science, which to date, did not seem to improve the overall educational quality or well-being of children (please refer to Sweden Country Report in Appendix 1.6).

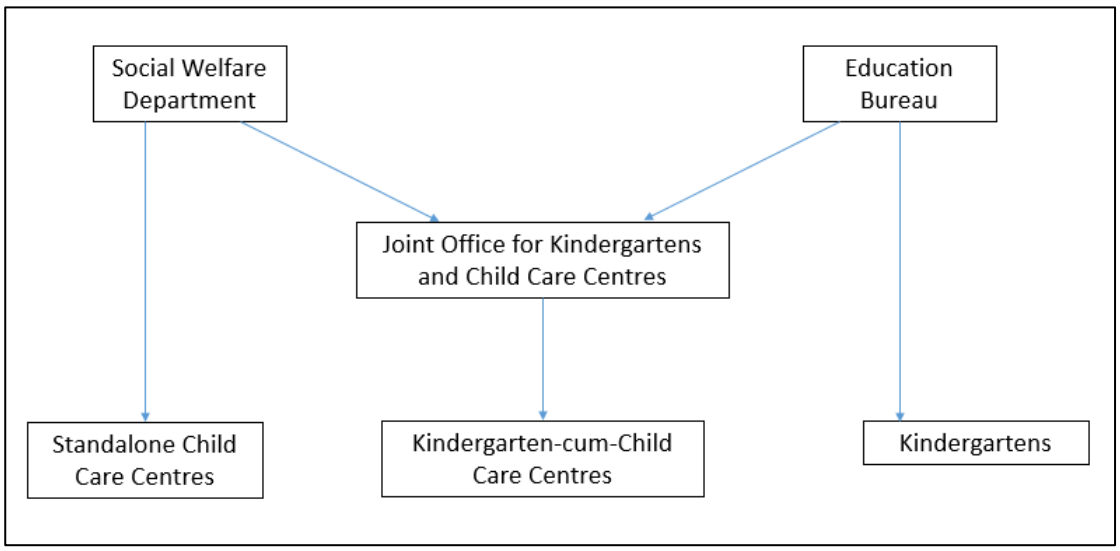


Figure 2. 10 The governance of child care services in Hong Kong

Figure 2.10 shows the regulatory structure in Hong Kong in which SWD oversees standalone CCCs; while EDB oversees KGs. Under the harmonisation policy of pre-primary services, the JOKC was set up in 2005 to monitor the operation of KG-cum-CCCs.

Separate systems of care and education can create a hierarchy of unequal resource distribution that fails to consider the critical nature of early childhood development and prioritises 'education' over care, in terms of the required levels of skill for the staff and the prestige of the profession. Thus, Finland has a unitary systems amongst the regions, while Singapore, South Korea, Australia, Hong Kong have different regulatory systems where CCCs for the younger children (usually 0 to 36 months) are overseen by social welfare/health departments, and KGs overseen by government education departments.

[31] Taguchi & Munkammer, 2003

Implications for Hong Kong - Hong Kong should consider taking further action to streamline, coordinate, if not unify, the regulations among the two monitoring bureaux/departments. As evident in Finland and Sweden that taking a whole child approach involving a more unitary type arrangement is useful for developing a child-centred approach. With reference to Appendix 1, the responsibility of overlooking ECEC in Finland was moved from Ministry of Social Affairs and Health to the Ministry of Education and Culture in 2013, and in Sweden from the Ministry of Health and Social Affairs to the Ministry of Education and Science in 1996. Although Finland had been taking a more laid-back approach in terms of pre-primary education, and in Sweden's case driven by a vision of the Prime Minister to "become a nation of knowledge"[32], however, they have recognised the need to change it to a more education oriented goals to ensure their children receive the appropriate guidance to develop healthily. As observed in Hong Kong, some parents see the training programme of CCCs as very important as it can affect the chance of getting into certain KGs which in turn can affect the chance of getting into certain strategic, well-positioned primary schools. As each step is a lot more competitive compared to Finland and Sweden, thus through a unitary system in governance of ECEC, parents can ensure their children do not just receive mere care in centres but through interactions with educators, children's physical, social, emotional and cognitive developments will also be shaped. In other words, the "starting line" towards a fully developed individual is being moved forward but through a play and self-initiated learning setting. The current division of labour between EDB and SWD will need to ensure that there is appropriate training programmes in place not just for children to develop holistically but also help the children to transition from a child care setting to kindergarten setting. The experiences in other jurisdictions, such as practices in Finland and Sweden, could serve as reference for Hong Kong.

Hong Kong should also take into account areas of improvement found in other jurisdictions regarding better cooperation and coordination between government departments which are responsible for different aspects of child care and education, to avoid confusion over policies such as the dual staff-to-child ratio (such as kindergarten aged children having a lower teacher-to-pupil ratio at 1:11 and younger children in CCCs having a higher staff-to-child ratio of 1:14) as implemented by the two different governing bodies for better clarification. In Australia, the regulation and overseeing of pre-primary, primary and secondary schools are disjointed, with the Department of Human Services in charge of the former, while the Department of Education and Training monitors the latter. Therefore, this affects the transition of children from pre-primary to primary school, specifically around curricula and expectations, i.e. the challenges in adapting to new environment. Moreover, there is not much research to evaluate the effectiveness of the curriculum for 3-year-old. This is similar to Singapore and Japan, where there is no fixed government curriculum and it is up to the centres to develop their own curriculum, meaning that it varies greatly from centre to centre, and affects the consistency of quality. In South Korea, there is a gap in ECEC provision for children between the age of 6 to 8, as there is child care from age 0 to 5, while primary school starts at age 8. It is thus important to ensure that not only services do not overlap, but they are also not missing or inadequate as well.

[32] Taguchi & Munkammer, 2003

2.4 Summary

Along with each of the six selected jurisdictions, namely Australia, Finland, Singapore, South Korea, Japan and Sweden, the philosophy and objectives of child care services in Hong Kong were reviewed. First, it has been revealed that facing the rising demand for child care services, the six jurisdictions have taken different approaches, and such differences are closely related to their welfare regimes. Second, the comparisons have identified some areas which can be improved in Hong Kong's child care system: 1) lowering of the staff-to-child ratio; 2) increasing the level of professionalism of child carers; and 3) making appropriate improvements to the coordination in governance and monitoring between different departments which does not necessarily mean the implementation of a unitary system, but better clarification especially in new staff trainings to avoid any confusion.

Chapter 3 The current modes of operation and positioning of child care services

This chapter summarises the current modes and positioning of child care services in Hong Kong. To fully demonstrate the existing provision of child care services, the consultant team analysed multiple latest data obtained from the Government, service operators/providers of day child care services and websites.

The consultant team reviewed six types of child care services, including standalone CCC, CCCs attached to KGs, OCCS, EHS, MHCCCs and NSCCP. For each type of service, four major types of information are examined: 1) its overall profile in Hong Kong and across 18 districts; 2) its availability in Hong Kong and across 18 districts; 3) its accessibility in Hong Kong and across small areas Large Street Blocks ("LSBs"); and 4) its affordability in Hong Kong and across small areas LSBs.

The consultant team further addressed the following proposed research questions in this chapter:
1) What are the general profile and the three key indicators (accessibility, availability and affordability) of child care services in Hong Kong?
2) Are there differences between the general profile and the three key indicators of aided child care services versus non-aided child care services?
3) Are there any spatial differences in the profile of child care services in Hong Kong?

3.1 The overall profile of child care services

In this section, the consultant team presents the overall profile of the six types of child care services in Hong Kong as of June 2017 as summarised in Table 3.1. For each type, the current modes for both government-subsidised or aided and non-government-subsidised or non-aided services are shown, in five dimensions namely 1) the number of centres by service, 2) the number of places, 3) the staff-to-child ratio, 4) the service fee, and 5) the operating hours. All figures referred to in this chapter are in Appendix 4.

Table 3. 1 Overview of the six types of child care services in Hong Kong as of June 2017[33]

Nature of Day Child Care Services	Number of Service Units	Target Age Group and Number of places	Service Nature/ Operating Hours	Service Fee and Financial Assistance
Standalone CCCs	Aided: 12 Non-aided: 15 Total: 27	Target Age: 0 to under 3 Aided Places: • 0 to under 2: 724 • 2 to under 3: 14 Non-aided places: • 0 to under 2: 78 • 2 to under 3: 2 247	Provide long full-day child care service by aided standalone CCCs. 8 am - 6 pm (Monday to Friday) 8 am - 1 pm (Saturday)	Aided: (0 to under 2): HK$4,385 - HK$6,300/month (2 to under 3): HK$4,564/month Non-aided: (0 to under 2): HK$6,250 - HK$8,250/month (2 to under 3): HK$1,680 -HK$9,580/month Full or partial fee waived for children from low income families with social needs and receiving full-day child care service
CCCs attached to KGs	Aided: 246 Non-aided: 271 Total: 517	Target Age: 0 to under 3 Aided Places: • 0 to under 2: 255 • 2 to under 3: 5 985 Non-aided places: • 0 to under 2: 774 • 2 to under 3: 20 596	Provide long full-day care services by aided CCCs attached to KGs. 8 am - 6 pm (Monday to Friday) 8 am - 1 pm (Saturday)	Aided full-day: HK$2,023 - HK$6,498/month Half day: HK$1,100 - HK$4,100/month Non-aided full-day: HK$ 2,474 - HK$14,431/month Half day: HK$1,559 - HK$10,400/month Full or partial fee waived for children from low income families with social needs and receiving full-day child care service
OCCS	214*	Target Age: Under 3 (in aided standalone CCCs); Under 6 (in aided KG-cum-CCCs) Places: 434	Provides occasional child care assistance on full-day, half-day or two-hour sessional services at aided standalone CCCs and KG-cum-CCCs for parents or carers with sudden engagements or various commitments. Same operating hours as the services attached to.	Full-day session: HK$64/session Half-day session: HK$32/session Two-hour session: HK$16/session Meal charged at: HK$6.4 (HK$6.5 with effective from 1 July 2018) Fee subsidy for low income families with social needs

[33] Source: SWD, 2018

EHS	165*	Target Age: Under 3 (in aided standalone CCC); Under 6 (in aided KG-cum-CCC) Places: 2 254	Provides longer hours of child care assistance at aided standalone CCCs and KG-cum-CCCs to meet the social needs of families and working parents. 6 pm – 8 pm (Monday to Friday) 1 pm – 3 pm (Saturday) Individual centre may vary their operating hours depending on the service demand.	HK$13/hour Fee subsidy for low income families with social needs
MHCCCs	20	Target Age: Under 3 (Aged 3 to 6 subject to centre operation) Places: 275	Promote mutual help on child care within the neighbourhood. Activities mainly carried out by volunteers, neighbours, parents in the form of mutual help child care group Flexible operating hours	HK$8 – HK$26/hour (one of MHCCCs provides free-of-charge service) Full or half fee waived for low income families (only applicable to those MHCCCs that have joined the Subsidy Scheme) via the Subsidy Scheme for Mutual Help Child Care Centre
NSCCP	18	Target Age: Under 9 (home-based child care service) 3 to under 9 (centre-based care group) Places: 954 (Service operators have the flexibility to increase the number of places provided by the child carers on top of the minimum requirement set by SWD to meet the actual service demand).	Provides needy parents with flexible form of day child care service at the neighbourhood level and, at the same time, foster mutual help and care in the community. Two service components: home-based child care service (“home-based”) and centre-based care group (“centre-based”) Home-based: 7am to 11pm (all year round); Centre-based: covers the evenings, some weekends and some public holidays.	Home-based : HK$18 to HK$24/hour Centre-based : HK$10 to HK$24/hour Full or half fee waiving for low income families via Fee Reduction/ Waiving Scheme

* Subvented ancillary services attached in the aided standalone CCCs/ KG-cum-CCCs

3.1.1 Standalone child care centres ("CCCs")

Number of centres **-** There are in total 27 standalone CCCs in Hong Kong, including 12 aided and 15 non-aided. All the 12 aided standalone CCCs provide long full-day child care services for children under 2 with only two which also provide services for children 2 to under 3 (one provides aided CCC places while the other provides self-financing CCC places). On the contrary, most of the non-aided standalone CCCs (14/15) focus on children aged 2 to under 3 and only three centres which also provide services for children under 2.

Number of places **-** There are in total 3 063 places, with 738 aided and 2 325 non-aided. All aided standalone CCCs provide long full-day service for children under 2 (724 places) with one centre providing 14 CCC places for children 2 to under 3. The places of aided and non-aided standalone CCCs are summarised in Table 3.1 as well as in Table 3.2.

Table 3. 2 Number of centres and places of aided and non-aided standalone CCCs

Types	No. of centres	Places for children under 2			Places for children 2 to under 3			Total
		Full-day	Half-day		Full-day	Half-day		
			AM	PM		AM	PM	
Aided standalone CCCs	12	724	0	0	14			738
Non-aided standalone CCCs	15	22	28	28	65	1 114	1 068	2 325
Total	27	746	28	28	79	1 114	1 068	3 063

Staff-to-child ratio **-** The minimum qualified staff-to-child ratio for children under 2 and 2 or above is mandated at 1:8 and 1:14, respectively, by CCSO (幼兒服務條例) and CCSR (幼兒服務規例). The 12 aided standalone CCCs and 15 non-aided CCCs are meeting this mandatory requirement.

Service fee **-** The fee charged for children under 2 is higher than those for 2 to under 3, with a monthly fee of HK$4,385 to HK$8,250 and HK$1,680 to HK$9,580, respectively.

Operating hours **-** Aided centres open from 8am to 6pm from Monday to Friday and the morning session (8am to 1pm) on Saturday, with a few non-aided centres varying their service hours depending on the service demand (e.g. start or end a little bit earlier or later).

Pattern across districts **-** When looking at the district level, the spatial distribution of CCCs is uneven across 18 districts. In 6 districts i.e. Islands, Tai Po, Sai Kung, Wong Tai Sin, Kwun Tong and Southern, there are no aided standalone CCCs. When taking into account the non-aided standalone CCCs, there are still 3 districts i.e. Tai Po, Sai Kung and Southern, with no standalone CCCs (Figure 4.1 of Appendix 4). The non-aided standalone CCCs are mainly located in Kowloon and Hong Kong Island with 1 370 places and 545 places, respectively. Among the 1 370 places in

Kowloon, around 80% of them are in Kowloon City (i.e. 1 080 places). There are only 364 non-aided places in the New Territories as depicted in the heat map (Figure 4.2 of Appendix 4).

3.1.2 CCCs attached to kindergartens ("KGs")

Number of centres **-** There are in total 517 CCCs attached to KGs in Hong Kong, including 246 aided and 271 non-aided. Most of the CCCs attached to KGs target children 2 to under 3 with nine aided and 19 non-aided are also providing places for children under 2. Aided CCCs attached to KGs mainly provide long full-day service while non-aided CCCs attached to KGs are designed to focus more on providing half-day service.

Number of CCC places **-** All aided and about half of the non-aided CCCs attached to KGs provide full-day child care service for children 2 to under 3, with a total of 26 581 places with 5 985 aided and 20 596 non-aided. For children aged 0 to under 2, aided places are 255, and non-aided places are 774, making a total of 1 029 places (see Table 3.2). In terms of half-day child care service for children 2 to under 3, 43 aided centres have morning sessions and only 12 aided centres have afternoon sessions, while more than 90% non-aided centres (247/272) provide morning sessions and around 85% non-aided centres (231/272) provide afternoon sessions.

Staff-to-child ratio **-** The staff-to-child ratio of aided centres ranges from 1:5 to 1:14. The variation in non-aided centres is larger than the aided centres.

Service fee **-** The fee charged for children under 2 is significantly higher than that for children 2 to under 3, with the mean monthly fee of HK$6,198 and HK$4,577 respectively. The fee of aided CCCs attached to KGs is around HK$1,500 - HK$2,000 lower than the non-aided, for either whole day or half-day sessions.

Operating hours **-** The operating hours of all aided CCCs attached to KGs are from 8am to 6pm on weekdays and from 8am to 1pm on Saturdays. By comparison, the operating hours of aided CCCs are much longer than those non-aided.

Pattern across districts **-** Figure 4.3 of Appendix 4 shows the geographical locations of aided and non-aided CCCs attached to KGs. The spatial distribution of CCCs attached to KGs is also uneven across 18 districts. The uneven pattern is more apparent in the heat map by district, age group and service targets and service nature (i.e. whether aided or non-aided) (Figure 4.4 of Appendix 4). The heat map shows that Eastern and Kowloon City districts have significantly higher provision of CCCs attached to KGs with 3 276 and 3 843 places, respectively. The Eastern district occupies more than half of the CCC services attached to KGs on the Hong Kong Island, and Kowloon City district accounts for almost half of the CCCs attached to KGs in Kowloon. Those places in the Eastern district and Kowloon are mainly accounted by the non-aided ones. The number of aided places is, however found to be significantly higher in Kwun Tong and Sai Kung districts, with 644 and 543 aided places, respectively.

3.1.3 Occasional child care service ("OCCS")

Number of centres and places **-** OCCS is designed for parents or carers with sudden engagements or various commitments. Only aided standalone CCCs/KG-cum-CCCs provide subvented OCCS services. Almost all aided standalone CCCs (11/12) provide OCCS, despite the places being very limited (i.e. a total of 15 places). In Hong Kong, there are 214 OCCS centres with a total of 434 subvented places.

Service fee **-** *Service* fee is the same for all OCCS centres, fixed by the Government at HK$64, HK$32, HK$16 for full-day, half-day and two-hour sessions, respectively, and, with effect from 1 July 2018, the meal charge is HK$6.5.

Operating hours **-** The service can be in the form of full-day, half-day or two-hour sessions. Consistent with FSA, most of the OCCS places operate within the operating hours of the aided standalone CCCs and KG-cum-CCCs.

Pattern across districts **-** The distribution of OCCS places is mapped in Figure 4.5 of Appendix 4. This service is lacking in most areas of Hong Kong. On average, each district only has 25 subvented places, varying from 8 (Islands) to 45 (Kwai Tsing).

3.1.4 Extended hours service ("EHS")

Number of centres and places **-** To meet the social needs of families and working parents, EHS provides longer hours of child care assistance at some aided standalone CCCs and KG-cum-CCCs. Almost all aided standalone CCCs (10/12) provide EHS service, and 155 of the 246 KG-cum-CCCs offer EHS service with a combined total of 2 254 subvented places.

Service fee **-** Service fee is charged on an hourly basis, and determined as HK$13 per hour by the Government for subvented EHS.

Operating hours **-** In most centres, the operating hours have been extended from 6pm to 7pm or 8pm on weekdays and from 1pm to 2pm or 3pm on Saturdays. Individual centres may vary their service hours depending on the service demand.

Pattern across districts **-** The spatial distribution of EHS is mapped in Figure 4.6 of Appendix 4. The average places of all districts are 147, varying from 78 (Islands) to 363 (Kwun Tong) (Figure 4.7 of Appendix).

3.1.5 Mutual help child care centres ("MHCCCs")

Number of centres and places **-** As at June 2017, there are 20 MHCCCs in Hong Kong. Most of the centres provide 14 places at any one time during their operating hours of service, with only one exception providing 9 places.

Service fee **-** Service fee is charged on an hourly basis, varying from free to HK$26 per hour, the average fee is HK$13 per hour.

Operating hours **-** Service hours are flexible and usually cover the evenings, some weekends and some public holidays. Some centres also offer service by appointment in late evenings, on the weekends and during public holidays.

Pattern across districts **-** The distribution of MHCCCs is greatly uneven across districts (Figure 4.8 of Appendix 4). The number of MHCCC places in Kwun Tong, Kwai Tsing and Yuen Long districts are significantly higher than other districts, while 7 districts do not even have any MHCCCs, which include Islands, Tuen Mun, Sha Tin, Sai Kung, Kowloon City, Wan Chai and Eastern districts.

3.1.6 Neighbourhood support child care project ("NSCCP")

Number of projects **-** There are 18 NSCCPs in Hong Kong with each district having one project. Each project has two types of services, including home-based child care service and centre-based care group. Home-based child care service is mainly designed for children aged under 9 at the home-based child carer's own residence or at a suitable place approved by the service operator, while centre-based care group is only available for children aged 3 to under 9. Activities in the late evenings, such as after 8:00pm, are basic care.

Service fee **-** Service fee is charged on an hourly basis, and is determined by the service operators and approved by SWD, varying from HK$18 to HK$24. The average fee is HK$20 per hour.

Operating hours **-** The home-based child care service is available from 7am to 11pm. In case of very exceptional circumstances, such as sudden/urgent change of family circumstances and without immediate support available from personal network, overnight stay is also provided by the home-based child carers. The centre-based care group however covers the evenings, some weekends and some public holidays.

Pattern across districts **-** The number of home-based child carers is significantly higher in Kowloon City and Eastern districts; the average is 264 home-based child carers in each district. The total number of home-based child carers as of June 2017 is 1 911. It ranges from 20 (Islands) to 437 (Kowloon City) as of June 2017 (Figure 4.9 of Appendix 4).

3.2 Government financial assistance to services

All the day child care services are fee-charging. Subject to the level of financial support provided by the Government which are in different forms, the service fee of different child care services varies. The types of financial support given by the Government to the service operators of the day child care services are as follows:

- **Aided CCCs (including standalone CCCs and CCCs attached to KGs)**: The service operators receive actual reimbursement of rents, rates, and government rents as well as subsidies under the Child Care Centre Subsidy Scheme ("CCCSS"), Subsidy for Operation Enhancement ("SOE", excluding CCCs attached to KGs) and SME, which are recurrent allocations. Besides,

there are also Lotteries Fund Grants for the fitting-out works, renovation and purchase of furniture and equipment, if they are eligible.

- **OCCS and EHS:** Annual subventions are allocated under the Lump Sum Grant to the service operators to deliver the services. These lump sums have taken into account the personal emoluments and other charges applicable to the operation of the project together with the recognised fee income, if any. The service operators have autonomy and flexibility in the deployment of the subvention resources to meet their service needs in accordance with the Lump Sum Grant Manual.

- **NSCCP:** NSCCP is funded as subsidy under the Central Items. Each service operator is allocated an annual contract sum, covering Personal Emolument ("PE") and Other Costs ("OC"). The service operator is also given the option to apply for higher allocation for the contract sum to meet proven higher service utilisation of its serving district. The service operators receive actual reimbursement of rents, rates, and government rents.

- **MHCCCs:** MHCCCs are run by bona fide non-profit making organisations on a non-profit making and self-financing basis. The service operators receive actual reimbursement of rents, rates, and government rents.

The 12 aided standalone CCCs and 246 CCCs attached to KGs, receive the above-mentioned subsidies from the Government. The parents pay about 80% of the costs while the Government subsidises the remaining 20%. The EHS and OCCS are subvented services. NSCCP receives subsidies from the Government while the MHCCCs are self-financed. Table 3.1 summarises the service fees of different types of child care services.

Non-aided CCCs are mainly run by non-profit making organisations or private agencies. They are only allowed to build up a profit margin of 5% and 15% respectively, to improve the quality of services and sustain the service operations.

Low income families with children attending KGs or full-day child care centres are entitled to apply for the Kindergarten and Child Care Centre Fee Remission Scheme ("KCFRS") from the Student Finance Office ("SFO") of the Working Family and Student Financial Assistance Agency. The KCFRS is applicable to children receiving full-day services in CCCs. Details are tabled below in Table 3.3.

The Student Finance Office adopts the Adjusted Family Income ("AFI") method and "social needs assessment" (please see Appendix 2 and Appendix 3) to determine the eligibility of a family for full-day child care services and the level of fee remission. Children attending half-day child care services are not eligible.

Table 3. 3 Financial assistance scheme –Kindergarten and Child Care Centre Fee Remission Scheme

Services	Scheme
Standalone CCCs and CCCs attached to KGs (Group age 0 to under 2)/ (Group age 2 to under 3)	- Means-tests and social need assessment - Provide fee subsidy to children of low income families receiving whole-day care services in child care centres. - Three levels of fee remission: 50%, 75%, and 100% of the actual fee charged by the child care centres or the fee remission ceiling, whichever is less.

3.3 Availability of child care services

Availability refers simply to the number of child care places available for all children in each district with the assumption that all children need child care services. It is calculated as the number of children divided by the number of places. The indicator of availability can reveal whether the provision of services is sufficient in a specific area. Availability is one aspect of accessibility, which is a broader concept that captures how easy or difficult for families to find and use regulated child care services. Detailed compilation of the availability index, as well as explanations of the calculations is shown in Appendix 5.

3.3.1 Availability of CCCs service (including standalone CCCs and CCCs attached to KGs)

Overall availability (under 2) **-** Based on the most updated 2016 census data, there are 111 240 children aged under 2 in Hong Kong. There are 1 831 places for children aged under 2. Therefore, the overall availability (aged under 2) is 1: 61, which means that with every 61 children aged under 2, only one place is available.

Aided places (under 2) **-** The overall aided CCC places for children aged under 2 are 979. The availability is 1:114, which means that with every 114 children, only one place is available.

Pattern across districts (aided under 2) **-** There is significant difference in availability across 18 districts. There are no aided places for children aged under 2 in Southern, Kwun Tong, Wong Tai Sin, Sai Kung, Tai Po and Islands districts. In Sai Kung and Kwai Tsing districts, the competition is also keen, with 390 and 361 children respectively, competing for one place. The district which has the highest availability of aided places (under 2) is Wan Chai, with every 50 children having one place available (Figure 4.10 of Appendix 4).

Non-aided places (under 2) **-** The general situation in Hong Kong is that the availability for non-aided places among children aged under 2 services is relatively less compared to aided places, with the availability of 1:131. This means that with each 131 children aged under 2, there is only one non-aided place.

Pattern across districts (non-aided places under 2) - The availability of non-aided places for children aged 0 to under 2 varies vastly across districts. Most of the non-aided places are in the Eastern district with the availability of 1 place to 15 children. While in Kwun Tong, North and Sha Tin districts, respectively, 1 193, 958 and 879 children have only one non-aided place (Figure 4.11 of Appendix 4).

Overall availability (2 to under 3) -There are 52 780 children aged 2 to under 3 in Hong Kong. The number of places provided for these children is 28 842 with 5 999 aided and 22 843 non-aided places. Therefore, the overall availability is 1:2, which means that for every 2 children in this age group there is one place.

Aided places (2 to under 3) -The overall number of aided CCC places for both standalone CCCs and CCCs attached to KGs for children aged 2 to under 3 are 5 999. The availability is 1: 9, which means that for each 9 children there is one aided place.

Non-aided places (2 to under 3) - The availability of non-aided CCCs for children aged 2 to under 3 is significantly higher than aided CCCs, with 22 843 places, which means that for each 2 children there is one non-aided place.

3.3.2 Availability of OCCS, EHS, MHCCCs and NSCCP

The nature of OCCS, EHS and MHCCCs services is more of occasional services to meet the demand for sudden or ad hoc child care needs, and the utilisation rate provided by SWD was at 68%, 55% and 9%, respectively (as at June 2017). NSCCP service operators have the flexibility to increase the number of places of home-based child care services on top of the minimum requirement set by SWD to meet the actual service demand. In other words, places of OCCS, EHS, MHCCCs and NSCCP are not fully utilised and available for service users, hence it is not meaningful to measure the availability of these services by comparing the number of places to the total population of the age group. As such, availability for these services is not discussed.

3.4 Accessibility of child care services

Accessibility captures some important aspects of child care provision that are not included in availability which focuses more on the relative ease of finding child care services. Availability is relatively more suitable for larger geographical areas such as the district level in Hong Kong, to explore whether the services are sufficient in some specific districts. Accessibility however, is more suitable for exploring the variation in the ease of accessing to child care services across smaller area levels such as large street blocks in Hong Kong. A higher accessibility indicator value refers to a better accessibility. Detailed compilation of the accessibility index and explanations of the calculations are shown in Appendix 5.

3.4.1 Accessibility of CCC services (including standalone CCCs and CCCs attached to KGs)

Aided places (0 to under 2) **-** There are apparent spatial disparities in the accessibility of aided places for children aged under 2 across large street blocks. Those areas with higher accessibility of aided places for children aged under 2 are located mainly in Kowloon, while most of the areas in the New Territories are short of aided places for children aged under 2, except areas such as the Yuen Long and North districts (Figure 4.12 of Appendix 4).

Non-aided places (0 to under 2) **-** Regarding the non-aided places for children aged under 2, the spatial disparity is more apparent than the aided. There is a high accessibility cluster hotspot located near Kowloon City and Wong Tai Sin districts. Areas such as Eastern and Southern districts on the Hong Kong Island also have higher accessibility, while, in the New Territories, the non-aided places for children aged under 2 are limited (Figure 4.13 of Appendix 4).

Aided/non-aided places (2 to under 3) **-** In terms of both aided (Figure 4.14 of Appendix 4) and non-aided (Figure 4.15 of Appendix 4), the situation for aged 2 to under 3 places are better, compared to those for aged 0 to under 2. The spatial distribution across large street blocks is not very apparent, although some "hotspots" and "coldspots" can still be identified. The aided and non-aided places for children aged 2 also manifest a small difference in terms of spatial pattern.

Accessibility by income level **-** Aided places (both standalone CCCs and CCCs attached to KG) are generally better supplied in areas with lower incomes. Similarly, as expected, non-aided places (both standalone CCCs and CCCs attached to KG) are generally easier to be accessed in areas with higher income, although the pattern is not as apparent as in the aided places.

3.4.2 Accessibility of OCCS and EHS

Overall pattern **-** The accessibilities of OCCS and EHS services are similar to standalone CCCs/CCCs attached to KGs as they are provided by the standalone CCCs /KG-cum-CCCs.

Spatial pattern **-** In some New Territories areas, such as Yuen Long and North districts, the accessibility of OCCS is relatively lower than other areas. Some hotspots of OCCS can be identified in Kowloon City district and some large street blocks on Islands district of Hong Kong (Figure 4. 16 of Appendix 4). There is no apparent hotspot or coldspot identified for the accessibility of EHS (Figure 4.17 of Appendix 4).

Accessibility by income level **-** OCCS and EHS have different patterns across the areas with different income levels. OCCS is easier accessible in areas with lower income, while EHS is easier accessible in areas with higher income. It should be noted that the accessibility indicator measures the potential ease/difficulty to access to the services, rather than the actual ease/difficulty to access to the services. For example, in some areas, the utilisation of services might be lower, while the indicator just simply measures whether in that area, the potential access to service is easy or not, instead of considering its actual utilisation.

3.4.3 Accessibility of MHCCC and NSCCP services

Similarity **-** Some MHCCCs are co-located with NSCCP, and not all districts have MHCCCs (Figures 4.18 and 4.19 of Appendix 4).

Difference **-** NSCCPs are more evenly distributed than the MHCCCs, with each district having at least one project and the number of home-based child carers vary among districts from 20 (Islands) to 437 (Kowloon).

Accessibility by income level **-** MHCCCs and NSCCPs have different patterns across areas with different income levels. MHCCCs are more accessible in areas with lower income, while NSCCPs are more accessible in areas with higher income.

3.5 Affordability of child care services

The affordability of child care is a key aspect of child care policy regimes. Affordability is a sign of how individual families can afford the financial burden of child care services. Whether or not the service fee can be paid for is the major problem especially for those low-income households. The affordability indicator is calculated as the median monthly service fee divided by the median monthly household income. Affordablity is expressed in percentage (%), the higher the % the lower the affordability of child care services relative to household income, and the lower the % the higher the affordability of child care services relative to household income. Detailed compilation of the affordability index and explanations of the calculations are shown in Appendix 5.

Aided standalone CCCs/CCCs attached to KGs **-** The overall affordability of aided CCCs and aided CCCs attached to KGs is 21.4% and 15.7%, respectively. This means that on average, people need to spend 21.4% and 15.7% of their household income on aided CCCs and aided CCCs attached to KGs, respectively.

Non-aided standalone CCCs/CCCs attached to KGs **-** The overall affordability of non-aided standalone CCCs and non-aided CCCs attached to KGs is 46.3% and 28.1%, respectively, which significantly utilises a larger proportion of the residents' monthly income than aided services.

Spatial pattern (lower affordability) **-** The spatial variations in affordability of aided standalone CCCs, aided CCCs attached to KGs, non-aided standalone CCCs and non-aided CCCs attached to KGs are very similar. In most districts in the New Territories and in some old inner-city districts such as Sham Shui Po, Yau Tsim Mong, Kwun Tong and Wong Tai Sin, people need to spend significantly higher proportion of their income on child care services. Most families need to spend more than half of their income on child care services. (Figures 4.20 to 4.23 of Appendix 4)

Spatial pattern (higher affordability) **-** While in most areas of Hong Kong Island and Kowloon, people have higher affordability for the services, on average, they only need to spend less than 10% of their income on child care services.

Difference between aided and non-aided services **-** The variation of affordability across areas is more apparent for non-aided CCCs and CCCs attached to KGs, especially for the non-aided standalone CCCs. Regarding aided standalone CCCs and CCCs attached KGs, the affordability range is from 3% to 39% while the average gap between the lowest affordability group and the highest affordability group is around 30%[34]. The affordability gap for non-aided services are even larger compared to aided services (Figures 4.20 to 4.23 of Appendix 4).

Service fee by income level **-** Service fee of aided standalone CCCs is on average lower in areas with lower median monthly income. CCCs attached to KGs (both aided and non-aided) also share a similar general trend.

Other types **-** The overall affordability of EHS is 3.07% based on the assumption that they use the service for a whole month. Technically, each day only an hour service is provided, therefore the monthly affordability gap between the highest and the lowest group is only around 4%. The affordability for the other three types of services, i.e. OCCS, MHCCCs and NSCCP was not calculated considering that these services rarely operate on a long term and monthly basis, and thus the affordability is not indicative.

3.6 The current positioning of child care services

Currently in Hong Kong, the positioning of child care services is to provide support and assistance to serve the needy families especially to those who have difficulty in providing proper care at home. There are two broad categories of care with six types of child care services available. To be more comprehensive, Figure 3.1 shows the three major child care providers in Hong Kong, namely home-based care provided by parents, centre-based care and volunteer-based care services subsidised by the Government.

The primary care givers are at home-based; i.e. parents and/or those with support from grandparents, relatives and foreign domestic helpers. This form of care-parental care, depending on their skills and behavior is fundamental to children's esteem, school achievement, and cognitive development behaviour in their early childhood (Landry, 2014), as well as children's physical, social and emotional development. Thus parent-child bonding is crucial for a child's holistic development and because parental qualities will also shape children's psychological profile (Kagan, 1999), it is of utmost importance to ensure the value of home-based care is being emphasised and perceived correctly by the public. In Hong Kong, one in eight families has a foreign domestic helper assisting with house chores and child care[35]. Though these child caregivers may be less trained and professional compared to centre-based services, i.e. CCCs, they provide support to parents enabling them to pursue their careers or other development. Some parents prefer this option as it allows the child to stay home and not having the child travel in and out every day. Others choose this option due to unavailable places at centre-based services.

[34] For aided standalone CCCs, the median affordability of the lowest affordable group is 39% and that of the highest affordable group is 4%, thus there is a difference of 35% (39%-4%=35%). For aided CCCs attached to KGs, the median affordability of the lowest affordable group is 32% and of the highest affordable group is 3%, hence there is a difference of 29% (32%-3%=29%). The average difference is therefore 32% or "around 30%" ((35% + 29%)/2).

[35] https://www.helperplace.com/domestic-workers-play-essential-role

Apart from home-based care, centre-based child care services, i.e. standalone CCCs and CCCs attached to KGs, as well as the ancillary services attached in the CCCs and KGs-cum-CCCs, namely OCCS and EHS are also very important services. With the increasing number of working parents, the demand for centre-based child care services has increased rapidly. Even in families where mothers are not working, they still apply for centre-based child care services due to the perceived impression that CCCs with more professionally designed programmes are more beneficial for their children.

The third one is the volunteer-based care services and the NSCCP and MHCCCs belong to this category. These services are usually inexpensive and more affordable to parents. NSCCP targets children from aged 0 to under 9 to avoid them being left unattended in the community with parents working for long, unstable, or unconventional hours, informal or with family in emergency needs. Parents with limited support network or financial hardship would often resort to this service. They can choose either the centre-based care group or home-based child care service. The MHCCCs are provided by local organisations, women's associations, church groups on a non-profit-making and self-financing basis for children aged up to 6. Child carers are volunteers, neighbours or parents who are the members of the mutual help group, and they address more short-term, occasional and temporary needs of parents. These volunteer-based child care services are somewhat supplementary to the home-based care and centre-based child care services.

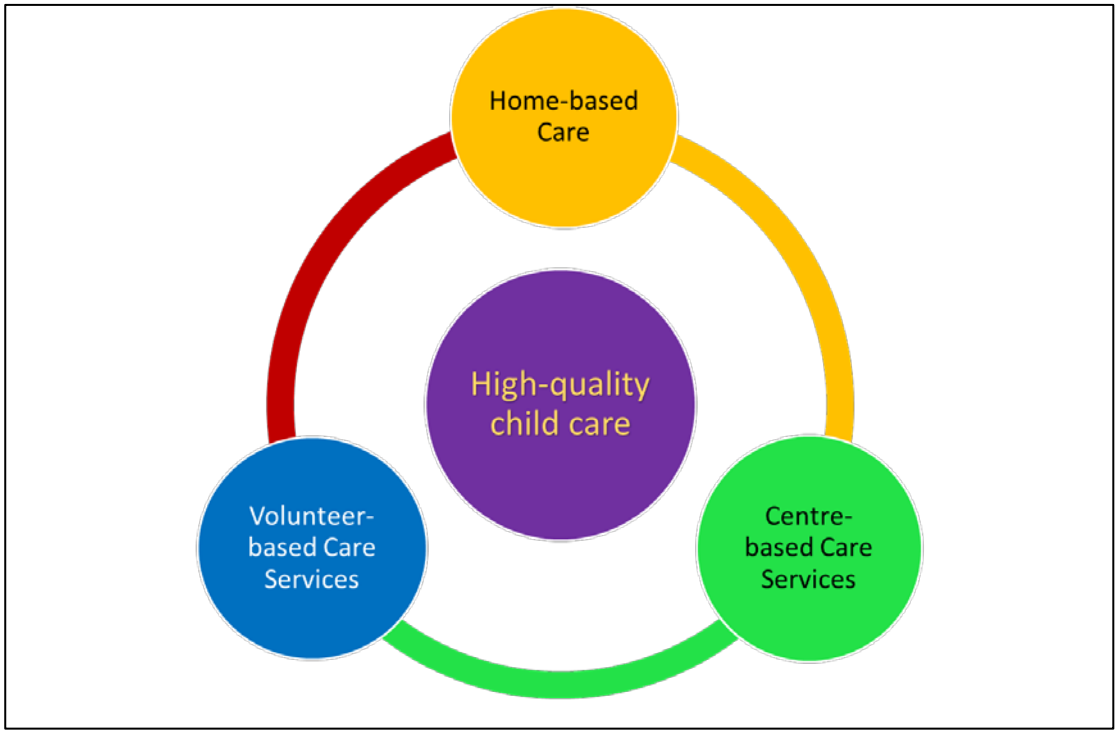


Figure 3. 1 The three major child care providers in Hong Kong

Taking into consideration the three major child care providers in Hong Kong, to promote high-quality child care would call for improvement in the quality of all, which ultimately lies upon improving the trainings for carers and staff. A standardised or more equalised service quality would mean proper training has to apply to different types of child care appropriate to the roles each provider plays. In the volunteer-based care service or home-based care, this would require

more training effort for non-professionals such as volunteers, foreign domestic helpers and parents to gain new insight and knowledge in child development, and raising parental awareness in the importance of parental care for children under the age of 2. (For more detail recommendation please refer to the recommendation section in Chapter 6.) Applying AAP's statement in Hong Kong, most of the time, the arrangement of early childhood care for children is a combination of all settings. In fact, as discussed previously, according to literature, it would be best for children aged under 2 to be cared at a home-setting environment, which further supports the objective above in equalising the service quality in all services. And through upgrading and standardising the service across all three sectors would provide parents a choice to select the best arrangement for children's development, streamlining the transition into kindergarten and mitigate the discrepancy that might occur across the groups, and at the same time, address family needs and support parents' employment. However, it is important to note that there is NO optimal solution for everyone, one size doesn't fit all. Parental preference and availability of support will definitely vary according to each individual case, thus at the end, parents need to make a choice on their child care arrangement based on the provision of child care services.

The above section has highlighted one of the key policy objectives in child care service positioning and achieving high-quality child care in Hong Kong, that is, optimisation of child development and well-being.

3.7 Summary

This chapter focused on the first level of estimation and provides a general profile of the provision of six types of child care services in Hong Kong. The gaps between demand and supply explored are simply assuming all children need child care services regardless of family composition or other socio-demographic factors. The higher levels of demand estimation based on family composition and other socio-demographic factors are being further explored in the next chapter.

To fully demonstrate the existing provision of child care services in Hong Kong, the consultant team analysed multiple latest data obtained from the Government, service providers of day child care services and websites. For each type of services, four major types of information were explored, namely 1) their overall profile and across 18 districts; 2) their availability and across 18 districts; 3) their accessibility and across large street blocks; and 4) their affordability and across large street blocks. The findings suggested that there are differences between the general profile and the three key indicators of government-subsidised and non-government-subsidised services. Moreover, there are also some spatial differences in the profile of child care services which have been identified from maps with relatively higher and lower provisions.

The chapter also reviewed the current positioning of child care services, focusing on the current state of the three types of child care providers, namely home-based, volunteer-based and centre-based care. The consultant team also identified the central need for equalisation of service across all three sectors mainly through improved trainings especially for non-professionals and raising parental awareness to the importance of home-based care in order to make the best possible decision for their children's development.

Chapter 4 Identifying service gaps and assessing the existing supply and demand of child care services

In previous chapters, a basic profile of Hong Kong child care services provision is examined, as well as the availability, accessibility and affordability of child care services across space and different socio-demographic background. The consultant team focuses on the following two research questions in this chapter:

1) What factors affect the demand for child care services (e.g. family composition, quality of services, cost) and how do those factors affect the choice?
2) Based on the identified factors influencing the demand, what is the expected demand of the child care services in Hong Kong, in terms of the number of places, no matter the service types?

In this study, the consultant team collected data on child care services and the related information through questionnaires targeting (1) *current users,* i.e. households with at least one child using child care services at the time of data collection; and (2) *non-current users* including *previous users,* i.e. households with at least one child who had used child care services previously but no longer using the services at the time of data collection, *potential users,* i.e. households with at least one child who was eligible to use and on the waiting list of the child care services at the time of data collection OR households without any children but the mother was pregnant/the pregnancy was under planning at the time of data collection) and *non-users*, i.e. households with at least one child but not using and not on the waiting list of any child care services at the time of data collection. Overall, the consultant team received 2 104 responses. Details of the questionnaire design, sampling and promotion methods are provided in Appendix 6.

4.1 Reasons (factors) for using (not using) child care services

The data indicated the reasons for using (not using) child care services are quite consistent across the six types of child care services and details are provided in Appendix 7. In particular, the consultant team observed what commonly stands out from the results on why using the child care services are apparently related to parental working status, i.e. parents have to work and whether the child is taken care of by family (or household) members. It is fairly consistent with the observation that those who chose not to use the child care services as their families (household) members could help to take care of their children. These results clearly indicate that parental working status and household composition (e.g. having grandparents and/or foreign domestic helper) affects a family's decision on whether to use (or not to use) child care services.

Apart from parental working status and household composition, two other factors that appear to be influential on the decision of using child care services are related to service centre location (convenience of the service locations) and the quality of services provided, in particular relating to whether the services are able to facilitate child' development. On the other hand, it is worth noting that a commonly cited reason among those reported who never used child care services was related to the lack of information on the availability of the services, i.e. do not know that there are child care services.

4.2 Estimating the demands for the child care services

In addition to the abovementioned descriptive analysis, the consultant team also took advantage of the data collected from the questionnaires to rigorously examine what factors affecting the sampled households' decision for using/not using child care services, and relatedly, estimating the demands of the child care services in the population. A logistic regression model was used (please see Appendix 8 for the detailed methodology and Appendix 9 for the components and results of demand estimation). Selection of the factors was referenced to HKPSG (2017)[36], which suggests that the provision of child care centres depends on the estimated demand, which would be affected by socio-economic factors, district characteristics and the provision of other child care support services within the district.

Results derived from the logistic regression models consistently indicated that both parental working status and household composition are the two key factors affecting the decision for using /or not using child care services. For instance, according to Table 9.17 to Table 9.19 of Appendix 9, across all models, it is observed that children in households with non-working parents were less likely to use child care services. In addition, across all models, it is also clear that children in households with either grandparents or foreign domestic helpers (or both) were less likely to use child care services. Based on the estimated model, the expected likelihood of certain types of households in using/not using child care service was derived. These probabilistic estimations are informative and used for projecting the demands of service, i.e. number of places for child care services. The estimated and projected demand for child care services for years 2016 to 2031 for children (1) aged under 2, (2) aged under 3, and (3) aged under 6 are shown in Table 9.23 of Appendix 9 while the breakdown of the demand in year 2016 can be referred to Table 9.20 to Table 9.22 of Appendix 9. Deducing from Table 9.23, the general demand for child care services for group aged under 2 and 2 to under 3 are summarised in Table 4.1.

Table 4. 1 Estimated and projected demand of the child care services for children population aged under 3 in year 2016 to 2031[37]

	Aged under 2	Aged 2 to under 3
2016	32 736	36 568
2021	32 818	36 660
2026	30 874	34 488
2031	27 711	30 955

For the year 2016, the estimated demand for child care services for the population groups under 2, and aged 2 to under 3 were 32 736 and 36 568, respectively. It is highlighted that the estimated figures represent the demand for child care services as a whole. In other words, it includes the demand irrespective of the types of service (i.e. centre-based child care services and voluntary-based child care services), service nature, (i.e. full-day and half-day services), as well as financing modes, (i.e. aided and non-aided services). Using the population projection from the

[36] The summary of Hong Kong Planning Standards and Guidelines (March 2017) published by HKSAR Planning Department is available at: https://www.pland.gov.hk/pland_en/tech_doc/hkpsg/sum/pdf/sum.pdf

[37] All figures are rounded to nearest integer.

Census and Statistics Department, the expected demand for child care services for the year 2021 for the population group under age 2, and aged 2 to under 3 will be 32 818 and 36 660, respectively (projected demand for child care services in the year 2026 and 2031 is provided in Table 4.1). With these calculations, it is conceived that the existing demand for child care services, as of 2018, for the respective children population groups will range between the expected demand for child care services in 2016 and 2021.

It is important to note that there is an implicit assumption that the "expected demand" is geographically invariant (demand for child care services are uniform across all spatial units, e.g. districts). However, this assumption does not take into account the geographical characteristics, for instance, some local geographical areas may have greater proportion of low socio-economic status families, and hence such regions may have greater demand for child care services, or some regions may have a greater proportion of older adult population and therefore, such regions may have less demand for child care services. Given the spatial heterogeneity of child care services demand, it is advised not to use the "planning ratio" as the sole mechanism for child care services planning. It would be more appropriate to take the range as a general guideline, and use it in conjunction with spatial-specific characteristics in service planning.

The consultant team has attempted to estimate the demand for aided centre-based services to facilitate the future and long-term planning of aided standalone CCCs. However, after reviewing the data collected from the questionnaires, it was found that there is insufficient information for such demand estimation, as the questionnaires contained no specific questions for identifying the respondents' preference between aided or non-aided services. Moreover, the questionnaires did not specifically asked non-users to indicate their preference on centre-based or voluntary-based services. Given these constraints imposed by the data collected, the consultant team considers that it would not be feasible to estimate the demand for aided centre-based services based on the principles described in Appendix 8.

However, the consultant team believes that some existing administration data from SWD can be utilised to provide some indication of the demand for aided centre-based services. The existing administration data refers to the number of places of aided and non-aided child care services as at June 2017. Although these figures do not represent the true population demand for the centre-based services, they nevertheless provide some basis for estimating the number of places the Government should cover for centre-based and voluntary-based child care services. According to the information provided by SWD, the current ratio of centre-based services for the population groups aged under 2 and aged 2 to under 3, are approximately 87% and 99% respectively[38,39,40]. These two figures could be indicative of the "expected" number of places for

[38] For the total places of child care services, the number only includes the places of CCCs, KG-cum-CCCs and NSCCP. Places of MHCCCs are excluded because it is of a low utilisation rate and will be re-engineered by phases from 2019-20 onwards as mentioned in The Chief Executive's 2018 Policy Address (available at: https://www.policyaddress.gov.hk/2018/eng/pdf/PA2018.pdf).

[39] There are totally 2 114 places (i.e. the sum of places of CCCs, KG-cum-CCCs and NSCCP) for children aged below 2. Among all, there are 1 831 places for centre-based services and 283 places for voluntary-based services. Thus, the current ratio of places for centre-based services to all services is approximately 87% (i.e. 1 831/2 114). Source: SWD, 2018

[40] There are totally 29 027 places (i.e. the sum of places of CCCs, KG-cum-CCCs and NSCCP) for children aged 2 to below 3. Among all, there are 28 842 places for centre-based services and 185 places for voluntary-based services.

the centre-based services provided by the Government. However, from stakeholder engagements, the consultant team is aware that the lack of supply of centre-based services in the current setting may have contributed to the use of voluntary-based services, i.e. a number of existing users of the voluntary-based services actually prefer to use centre-based services, but yet due to unavailability, they used voluntary-based service as an alternative.

Given this observation, the consultant team expected that the number of places for centre-based services that should be provided by the Government for children aged under 2 would be greater than the current 87% although the exact percentage is not known. Considering this, the consultant team used 95% (although arbitrary) for the projection. The purpose is to counterbalance the lack of supply observed. The remaining 5% will be supported by child care services other than CCCs, e.g. the NSCCP, which may provide flexibility outside the service hours of aided CCCs. As such, the number of places needed for centre-based service for children aged under 2 and aged 2 to under 3 in 2016 are 31 099 and 36 335 respectively while the number of places needed for voluntary-based services for children aged under 2 and aged 2 to under 3 in 2016 are 1 637 and 233, respectively. The estimated number of places needed for year 2021 to 2031 can be found in Table 4.2.

Table 4. 2 Estimated number of places for centre-based and voluntary-based child care services (percentage of specific types of services to child care services as a whole) for children population aged under 3 in years 2016 to 2031[41]

	Aged under 2		**Aged 2 to under 3**	
	Centre-based	Voluntary-based	Centre-based	Voluntary-based
2016	31 099 (95%)	1 637 (5%)	36 335 (99%)	233 (1%)
2021	31 177 (95%)	1 641 (5%)	36 426 (99%)	234 (1%)
2026	29 330 (95%)	1 544 (5%)	34 268 (99%)	220 (1%)
2031	26 326 (95%)	1 386 (5%)	30 758 (99%)	197 (1%)

To further estimate the demand for aided centre-based services, scenario analysis was conducted. In the first scenario (1), it is assumed that the number of places will be entirely provided by the Government. In other words, there is no role from the private sector in the market. It is expected that the Government needs to provide 31 099 places for group aged under 2 and 36 335 places for children aged 2 to under 3 in 2016. However, given the existing setting, i.e. the public-private split for group aged under 2 is 53% vs 47% while that for group aged 2 to under 3 is 21% vs 79%, where a sizable proportion of the services were actually covered by the private sector particularly for the group aged 2 to under 3, thus this assumption that the Government is the single provider for all centre-based place actually does not hold. The consultant team thus made another estimate, the second scenario (2), assuming that the existing public-private split of service provision will hold, the number of places needed for aided centre-based services would be different from the above scenario. The Government is expected to cover 16 628 places for group aged under 2 and 7 557 places for group aged 2 to under 3 in 2016. Still, a third scenario (3) is generated, assuming the current 852 non-aided centre-based places for under 2 and 22 843 non-aided centre-based place for aged 2 to under 3 remain the same, the Government will be the

Thus, the current ratio of places for centre-based services to all services is approximately 99% (i.e. 28842/29027). Source: SWD, 2018

[41] All figures are rounded to nearest integer.

provider of the remaining balance of demanded places for future centre-based services. The Government is then expected to provide 30 247 place for the group under 2 and 13 492 places for the group aged 2 to under 3 in 2016. The correspondent figures for years 2021 to 2031 estimated based on these three scenarios are summarised in Table 4.3.

Table 4. 3 Estimated places of aided centre-based child care services (percentage of places to age-specific population) for children population aged under 3 in year 2016 to 2031[42,43,44]

	Aged under 2			Aged 2 to under 3		
	(1)	(2)	(3)	(1)	(2)	(3)
	Government as the single provider in the centre- based child care service market	Public-private split of the market as the existing ratio	Number of 852 places for non-aided centre-based services remain unchanged	Government as the single provider in the centre- based child care service market	Public-private split of the market as the existing ratio	Number of 22 843 places for non-aided centre-based services remain unchanged
2016	31 099 (28%)	16 628 (15%)	30 247 (27%)	36 335 (69%)	7 557 (14%)	13 492 (26%)
2021	31 177 (28%)	16 670 (15%)	30 325 (27%)	36 426 (69%)	7 576 (14%)	13 583 (26%)
2026	29 330 (28%)	15 682 (15%)	28 478 (27%)	34 268 (69%)	7 128 (14%)	11 425 (26%)
2031	26 326 (28%)	14 076 (15%)	25 474 (27%)	30 758 (69%)	6 398 (14%)	7 915 (26%)

Based on the estimated places of aided centre-based child care services, the respective planning ratio for the population groups under the age of 2 and aged 2 to under 3 are estimated. First, if the Government becomes the single provider (scenario 1) in the child care services market, the planning ratio should be 85 per 20 000 general population and 99 per 20 000 general population, respectively. On the other hand, assuming that the public-private split of the market holds (scenario 2), the planning ratio is expected to be 45 per 20 000 general population and 21 per 20 000 general population, respectively. Still, if the number of current places remain the same (scenario 3), the planning ratio is expected to be 82 per 20 000 general population and 37 per 20 000 general population. The corresponding figures for years 2021 to 2031 estimated based on these three scenarios are summarised in Table 4.4 below.

[42] All figures are rounded to nearest integer.

[43] The general demand of child care services for children aged 2 to under 3 is a simple subtraction of the demand for children aged under 3 to children aged under 2.

[44] % is calculated based on the estimated demand and the population size of the interest age group. For example, the % in 2016 for children aged under 2 is approximately 28% (i.e. 31,099/111,240).

Table 4. 4 Planning ratio of aided centre-based child care services for children population aged under 3 in year 2016 to 2031[45,46]

	Aged under 2, per 20 000 general population			Aged 2 to under 3, per 20 000 general population		
	(1)	(2)	(3)	(1)	(2)	(3)
	Government as the single provider in the centre- based child care service market	Public-private split of the market as the existing ratio	Number of 852 places for non-aided centre-based services remain unchanged	Government as the single provider in the centre-based child care service market	Public-private split of the market as the existing ratio	Number of 22 843 places for non-aided centre-based services remain unchanged
2016	85	45	82	99	21	37
2021	82	44	80	96	20	36
2026	75	40	73	88	18	29
2031	66	35	64	77	16	20

From stakeholder engagements, the consultant team was aware that with the high operational costs, the private sector has relatively less interest in providing centre-based child care services for the children population aged under 2. On the other hand, there is a greater interest among the private sector to contribute in the market for the age group of 2 to under 3. Given this information, it is expect that, given that there is no substantial change in the existing institutional environment, i.e. a substantial increase in incentive, the private market may unlikely to take up a substantial proportion of the centre-based child care services provision, particularly for the age group of under 2. Given this circumstance, the consultant team assumes that the current 852 places will remain for the age group under 2, and recommends that the Government should adopt a planning ratio for children aged under 2 which reflects that it will be the dominant provider in the market, providing the remaining balance of the number of demanded places required for the future according to **scenario 3.** On the other hand, for the group aged 2 to under 3, the estimate, given the information provided by the informants, is that the private sector may have a greater interest in participating in the market, the Government should adopt **scenario 2**.

To conclude, the planning ratio for children aged below 3 would be 103 places per 20 000 general population (i.e. 82 places per 20 000 general population for children aged under 2, plus 21 places per 20 000 general population for children aged 2 to 3.

4.3 Summary

This chapter highlighted the factors that may affect the demand for the child care services, and the findings clearly highlighted that the parents' working status and family arrangement (and among

[45] All figures are rounded to nearest integer.

[46] As stated in Appendix 8, the planning ratio can be calculated by formula 8.7. For example, the planning ratio using the assumption that government is the single provider in the centre-based child care service market for group aged under 2 is approximately 85 per 20 000 general population, i.e. 31 099/7 336 600*20 000.

few others) are the key factors. This chapter also estimated the expected demand for the child care services in general which indicated that the estimated demand for child care services will increase in next few years but then shrinks afterwards, it is suggested that the planning ratio for child care places should be updated accordingly.

Chapter 5 Service modes and financing modes of the child care services

To understand the comments and unmet expectations of the service modes and the financing modes towards the current child care services, this study collects the stakeholders' opinions and data related to the above-mentioned two aspects. Qualitative data were collected from different stakeholders through one-on-one discussions, focus group interviews as well as the general public via email and deputation. Also, some information from the questionnaires also provide crucial information on the financing modes of the services. Overall, this information provides insight of the future development of the service model/mode and financing mode of the child care services. Sampling, data collection, questions, and analysis of the qualitative data are shown in Appendix 11.

5.1 Stakeholders' opinions on the current service modes and financing modes

In this section, findings from the interviews and comments from the focus group interviews, mainly on the service modes will be presented. Relevant quantitative data from the questionnaires that provide insight on these issues are also included in this section. For comments from Government officials, please see Appendix 12. For comments received from the general public by deputations and emails, please see Appendix 13.

Theme 1: Discrepancies between parents' expectation and existing services

The management staff perceived that professional staff is needed to provide "**edu-care**" and improve the service. Parents were also expecting **education elements in child care services,** e.g. language courses for the children. They expected their children to **have better development** in CCCs, such as **systematic trainings** for their children, services provided by **qualified staff** or **education professionals**, and an **interactive environment** that cannot be made possible by hiring individual foreign domestic helpers. Parents were also **disappointed** that there was **not much available quality child care service** in their districts. Furthermore, a non-service user revealed that CCCs could be more useful if the development of social skills among children with **special developmental needs** is being catered for.

Theme 1: Observations

Apparently, a common theme shared among different types of stakeholders is that there are discrepancies between the parents' expectations on the quality of early childhood care and the limitations that they experienced or perceived in current child care services. Some key words related to their ideal type of child care were often used during focus group discussions, such as child development, education, and interactive environment, etc. In particular, parents who received higher education in overseas jurisdictions or have had experiences living abroad expected to find quality child care service in Hong Kong, like those commonly found in other jurisdictions. Yet, to their disappointment, this sort of service featuring both "care" and "development" for their children could not easily be found available in Hong Kong, not to mention, in their own

neighbourhoods, or to fit-in their long working hours' schedule. It is a general belief that a structural programme that is regularly and consistently run by sufficient and professionally trained human resources would benefit their children's well-being. Besides, parents who need to work or receive no support from their family members may find child care services particularly critical because it can provide a stable and safe environment for their young children.

According to EDB, education elements in child care services have to be considered prudently as it will risk advancing the learning and teaching in kindergartens to CCC. "Language courses for children in CCC", for instance, is pre-mature for children aged 0 to 3. Even for kindergarten students, learning of language should not take the form of "language courses". Instead, an integrated approach should be adopted with emphasis on learning through play, free exploration and interaction with peers and teachers. Parents' views should be considered with regard to professional judgement from the perspective of children's development.

Theme 2: Same qualification, same pay

Management also perceived that the Government positioned child care services as a **remedial service** and is **inadequate to respond to the changing needs** of Hong Kong.

Management further perceived that it is an issue that **the salary for CCWs working in KG as teachers can earn higher salary than those working in CCCs**, even though they hold the same qualifications. For the staff at the frontline level, they suggested that **the salary for early childhood workers for children aged under 2 should be treated as the same as other teachers** of early childhood education. This adjustment would demonstrate the importance in equality of the services for the age groups of 0 to under 2 and 2 to 6 years old children.

Theme 2: Observations

The most dominant issue that is of the concern of many service providers (12 interviewees) is that even with the same level of qualification and education, the staff serving children aged under 2 in CCCs have been receiving a lower level of remuneration than their counter-parts in KGs who are serving children aged 3-6. Thus, there was a strong request for measuring up to the salary scale currently applied to the teachers working in KGs. However, the work requirements are totally different for CCWs in CCCs and KG teachers, their remunerations are not comparable.

However, the above observations may have been ameliorated from some recent developments, in particular, in light of the implementation of the new KGs education scheme by EDB in the 2017/18 school year, additional resources, namely SME was provided for standalone CCCs and the CCC portion of aided KG-cum-CCCs for enhancing the remuneration of qualified child care staff to retain and attract those staff starting from the 2017/18 school year. With the SME, additional subsidy is given to make the salary level of child care staff, i.e. Child Care Supervisors ("CCS"s) and CCWs in line with the upward adjustment of the salary range of KG staff as well as maintain quality service for children and provide support to the aided standalone CCCs and the CCC portion of the aided KG-cum-CCCs.

Theme 3: Lower staff-to-child ratio and better staff training and development

There are specific views on how to improve human resource planning suggested by the frontline level staff for different settings. For the service of standalone CCCs and CCCs attached to KGs, the interviewees suggested that the existing staff-to-child ratio cannot cater for the needs and

therefore suggested to improve the **staff-to-child ratio** to **1:4 for children aged 0 to under 1 or 1:6 for children aged 1 to under 2**.

To assure service quality, mentorship programme was also suggested to enable fresh graduates to provide quality service. A clear career development path with ranks divided into Child Care Worker I, Child Care Worker II, and Senior Child Care Worker is suggested. This would help to **recognise their professional experience.** Besides, social workers are suggested to station at kindergartens and nurseries to support the families in need[47].

For the service of MHCCCs and the NSCCP, there was **ambivalence** in arranging the children under the care of home-based child carers who are paid as volunteers with only a small amount of incentive payment. NSCCP is a mutual help support child care project rather than an employment project. Home-based child carers are working as volunteers and receive incentive payment as a recognition. **Higher amounts of incentive payments** were considered as a way to attract more home-based child carers for this service**.** Management attributes the difficulties in recruiting volunteer home-based child carers due to the unattractive level of incentive payment. The incentive payment for the home-based child carers of NSCCP is suggested to be reviewed and increased. Some interviewees proposed that the incentive payment could be increased to the same level of the statutory minimum wage.

Furthermore, the existing career path of the staff in CCCs is less favourable because there are **fewer positions in the supervisory ranks**.

According to SWD, there is an adequate supply of manpower for child care services as there are more than 2 000 holders of higher diplomas, as well as degree graduates in early childhood education joining the market each year. There are also new recognised training programmes offered by training institutues, which should boost the number of new staff.

Regarding the administrative system, several aspects are worth to be reviewed. The interviewees complained that there were a lot of administrative works which increase the workload of staff. For instance, the interviewees (from front-line service provider and management level) revealed that KG-cum-CCCs need to be compliant with different administrative requirements set by both SWD and EDB, such as, preparing two different and separate sets of financial reports for SWD and EDB; to provide detailed reporting about education elements and staff development in the service. As the format of required documentations was different, it created extra workload because of this dual-reporting system. This requires staff members to **perform additional administrative work** in comparison to their counterparts in KGs. For aided centres, some interviewees complained that the Government's subsidy does not cover the cost of clerical staff but there are much clerical works to be done to satisfy the Government's micro scrutiny on the tiniest spending.

For MHCCCs and NSCCP, NGOs are suggested to **increase the incentive payment** for the home-based child carers (e.g. to the same level of statutory minimum wage) and **extend the service hours** of the MHCCCs to meet the needs of parents.

[47] As promulgated in the Chief Executive's 2018 Policy Address, the Government will launch a three-year pilot scheme in the 2018/19 school year to provide social work services in phases for about 150 000 pre-school children and their families in more than 700 subsidised/aided CCCs, KGs and KG-cum-CCCs in Hong Kong for early identification and provision of assistance to pre-school children and their families with welfare needs.

Possible solutions to improve the staff-to-child ratio and stabilise the staff's turn-over rate were also discussed. To reduce and relieve teacher's[48] workload in CCCs, one of the possible solutions was to employ non-professional staff at a ratio of **2 professionals and 1 non-professional staff serving 16 children**. To improve the career path by dividing staff into different ranks (e.g. Child Care Worker I, Child Care Worker II, and Senior Child Care Worker) was a suggestion proposed by an interviewee. However, the detailed functions and division of labour amongst the proposed ranks may need to be further explored.

From service users' perspective, they perceived the reasons for high staff turn-over rate, especially in the service for children aged under 2, are due to: 1) unattractive salary; and 2) demanding workload (e.g. high staff-to-child ratio, long working hours, physically demanding work that may cause occupational injuries). They suggested that it might be helpful to increase the number of non-professional staff for non-educational tasks.

In general, the service users found it acceptable that the voluntary-based child care service are provided by trained volunteer carers, but preferably to employ professional staff (e.g. social workers, child care workers) if resources are allowed.

Theme 3: Observations

In general, different stakeholders look for better quality of child care services in different settings to improve the overall human resource planning, including better staff-to-child ratio, lower turn-over rate with better career prospect, training and development programme. For volunteer-based child care services, such as MHCCCs and NSCCP, they expected a higher incentive payment for home-based child carers to attract more volunteer child carers to join the service. Lack of stable supply of volunteer child carers seemed to be a challenge faced by these types of service settings.

Theme 4: Location, service targets and accessibility should be considered in service planning

In general, the interviewees suggested that **location, estimated number of service targets** and **accessibility** should be considered as basic criteria in planning the provision for child care services. Parents expected a location which is easily accessible, e.g. close to MTR stations, **within 30 minutes** travelling time. Also, they found it acceptable to be placed on the waiting list for child care services for a duration ranging from **1-2 months and 3-6 months**, but the waiting time should be made known to applicants in a **more transparent** way. For service hours, **longer operating hours** of child care services, e.g. 7-8 hours for toddlers/10-12 hours for infants, was desirable. **Service fee** was also suggested to be reviewed. For example, non-service users suggested setting it at a range from HK$2,500 to HK$3,500 per month for a whole-day programme. The public also suggested that each district should have at least two standalone CCCs for children aged 0 to under 3 and 50 to 80 places for each, and the service fee should be capped at 10% of the median family income in Hong Kong.

Theme 4: Observations

Parents expected to have higher accessibility to child care services and wished to be more certain on how long it would take for their children to be admitted into these services. This information

[48] For child care services, should be child care workers though interviewees mentioned "teachers".

seemed to be quite crucial for them to decide on what would be the best option for them to take care of their children. In general, they found that the transparency of the current child care service operations, especially in the application procedure, e.g. the waiting time, and service availability, e.g. available service and quota, are in need of improvement.

Theme 5: Service positioning and operation of MHCCCs/NSCCP need to be enhanced

Quite a few non-service users indicated that they did not know the service of MHCCCs/NSCCP, thus more promotion on these services is required. On the other hand, the management level revealed that the reason for the MHCCCs not been highly promoted was due to limited quotas. The managements also found that the current role of NSCCP unclear. It was more on **home-based babysitting** instead of systematic training for children, which was much more preferred by the parents. Many service users further agreed that they **preferred centre-based** child care services rather than arranging their children to home-based child carers' residence. From the perspective of service providers (management level and front-line level), **the incentive payment for home-based child carers** should be reviewed and increased. Instead of "professionalisation", the management proposed that the training for child carers serving in the MHCCCs could be **vocationalised,** and also their tasks be more standardised to ensure the quality of the services. This service could be provided by trained child carers, who would receive salary according to their training received and experiences on child care.

Theme 5: Observations

The design of MHCCCs and NSCCP was meant to optimise community resources to meet the child care needs within the neighbourhoods for the families in need and promote mutual help at the neighbourhood. Due to a number of limitations, these services turned out to be not in demand. The provision of MHCCCs and NSCCP seems not able to meet parents' expectation on child care. The views on how to improve these services in general were quite diverse. Service providers seemed to share a common view that an upward increase of the incentive payment for home-based child carers under NSCCP should be put on the top priority of consideration.

Key theme 6: The positioning of OCCS need to be reviewed

In general, there were requests that **quotas of occasional and temporary child care services (e.g. OCCS, MHCCC) should be increased** to cater parents' need in ad hoc situations. These services target both **full-time parents** and **dual-career parents.** Many interviewees indicated that the occasional child care services could serves as an option of **respite care** for their children**. Extending the operating hours,** e.g. till 9 pm was suggested to meet their child care needs due to long working hours. For some working parents, this service is very helpful, especially when their foreign domestic helper(s) go on a 2-weeks home leave in every 2 years.

Key theme 6: Observations

There is a discrepancy between the low utilisation of OCCS and the interviewees' opinions from non-service users which suggested increasing the quota of OCCS. There are two possible reasons for the discrepancy. Firstly, the existing quota of OCCS is too limited (e.g. one interviewee revealed that there are only 2 quotas available in the child care centre nearby her residence). It might give parents' impression that the quotas of OCCS are very limited that discourage them from using this service eventually. Secondly, according to non-service users' opinion, OCCS allows full-time parents to take a short break from taking care of their children and get assistance in any "just in case" situation.

In addition, the existing operating hours of OCCS seem to be falling behind parents' expectations who are often left with no choice but have to work long hours. Nowadays, such phenomenon seems to be quite prevalent in many workplaces in Hong Kong. Both service users and non-service users shared similar views on how to improve OCCS.

Theme 7: The reasons for being non-service users

Non-service users revealed that there was **no service available** nearby their residences, or the locations of CCCs were not convenient at all. Besides, they preferred their children to be bonded with regular child carers, e.g. foreign domestic helpers or grandparents, who would be more ready and willing to nurture them intimately and with attachment. Interviewees were also concerned whether centre-based child care service would lead to poor quality of parent-child relationship, e.g. weakening the bonding between parents and children. Yet, some of them concurred that if child care services could be improved, e.g. lower service fee and longer operating hours, **they would consider having at least one more child** in the future.[49]

For a parent who is a non-Cantonese speaker, i.e. Mandarin speaking, expressed that there were no non-Cantonese speaking child care services available for them.

The non-service users also suggested that the quotas of CCCs should be allocated to children with both parents wanting to take up full-time employment, and without grandparents or relatives as carers, or to families that receive no support from their in-laws, e.g. conflicts with their in-laws. The non-service users also reported that there was a lack of information on the availability of child care services. However, there were some non-service users, especially those parents with certain support from others, e.g. from the carers' parents, parents-in-law or foreign domestic helper, who felt that it was still the best for their children to stay at home and call on the day-time child carers to come to their home and care for the children rather than arranging them to attend CCCs. This was because of the risk of cross-infection and hygiene issues that made them reluctant to arrange their children to attend CCCs.

Theme 7: Observations

There are also some practical and legitimate reasons why non-service users did not choose child care services. Interviewees were quite certain that they would consider rearing more children if their concerns on child care services could be properly addressed.

Theme 8: The role of the Government vis-à-vis private market day child care services

Some service users suggested that the Government should provide more quotas of child care services, meanwhile, private service providers should be encouraged to provide affordable child care services similar to that of CCCs that could meet the needs of the parents who were willing to pay more for the services. However, it was the role of the Government to keep a monitoring system for quality assurance on privately-run child care centres.

[49] If there are more comprehensive child care services which are also cheaper, expenses for the families would be lower and the provision of child care would be more flexible, meaning that both parents could work full-time, for example, and a final outcome could be that the parents would be more willing to have another child, having faith that the child care system can be one of the many social supports for them.

Theme 8: Observations

In general, parents, particularly for those who are employed, expected to have more choices, which could meet their needs, and at the same time, they did not see the Government to be the sole providers, instead should play the role as quality gatekeeper for child care services.

The Government however, wishes to have a thorough analysis on the demand for CCCs. Indeed, it takes at least 7 years to set up a CCC, hence, it is unable to meet the service demands in short term.

5.2 Expected financing modes of child care services

The above section mainly focuses on highlighting the stakeholders' opinions on the service modes of child care services. From the interviews, some expressed the need for more affordable child care services as it creates a barrier for low income family groups. According to the exchanges with service providers, it is made aware that the services of CCCs and CCCs attached to KGs have been changing over the years. According to the information collected from the service providers, it is known that increasingly, more child developmental activities have been included in the services. These changes have attracted more service users from families of middle class and their affordability is different from low income families.

Given the observed phenomenon among a very diverse group of users in terms of household economic status, there is an expectation that the affordability (willingness-to-pay for the service) among the potential users is also very diverse. So, in this study, the consultant team conducted an exploratory economic analysis to identify the "preferred" price range of child care services on CCCs and CCCs attached to KGs. Details of the results are summarised in Appendix 14. Regarding OCCS and EHS, there were no adverse findings on the service fees from the focus groups although some users mentioned the Government could provide more subvention to enhance the staff-to-child ratio. Likewise, there were no negative findings about the service fees of MHCCCs and NSCCP, but service operators and volunteers expected a higher level of incentive payment for home-based child carers and provision of allowance for their transportation cost.

There are a number of interesting findings. First, although it was somewhat surprising that the proportions of respondents expressed willing-to-pay for the services at the "average" price (HK$5,000) is far higher for CCCs than CCCs attached to KGs, the pattern of the results obtained on CCCs and CCCs attached to KGs are similar. Second, the results support the notion that there exists a gradient of "acceptable amount" of service fee. From the results, low-income families are less willing to pay more for the current services. However, those high-income families are more willing to pay the existing "average" price, but cannot be seen to be willing to pay "more" than the existing amount (see Table 14.5 in Appendix 14). This indicates that there may be rooms to increase the service fees at a scale according to the level of household income for re-deployment of the resources. A scale with lower service fee for low-income families while higher service fee for high-income families may be explored.

Given the results, the consultant team believes that there is room to explore the subsidy and financial system in child care services. While the existing financing mode of CCCs stands mainly on a 80:20 cost ratio (user: government), the Government can consider having a more diversified subsiding profile – low-income families to receive a higher amount of subsidy and high-income

families to receive a lower amount. Reference can be made to Finland which is an example of this diversified financing mode (based on household income). To explore in the longer run, the converting of some non-aided centres or places to semi-aided centres or places might also provide availability and affordability to families who are in the middle income level and in need of child care services. In addition, as non-aided centres are already priced at market rate, middle and high-income families may be more inclined to pay for these services, to satisfy their expectations of child care in terms of meeting their children's training and developmental needs.

5.3 Summary

This chapter consolidated and analysed the stakeholders' views on service modes and financing modes of child care services (government officials, service providers involving the management and frontline staffs, service users and non-users and the general public). There were gaps on overall child care services including manpower planning, service availability, accessibility and affordability. In addition, this chapter also discussed the financing mode of the services, and the results highlighted the possibility of a more diversified subsidy system.

Chapter 6 Recommendations

Hong Kong is one of the jurisdictions having the lowest fertility rate in the world, with the present fertility rate of 1.13 per woman (Census and Statistics Department, 2018). Nevertheless, every year Hong Kong is still blessed with close to 60,000 babies being born (Census and Statistics Department, 2018). Demographically, in view of a rapidly ageing population, Hong Kong certainly welcomes these babies who will contribute significantly to slowing down the ageing situation and sustaining Hong Kong's long-term development.

The greatest concern of new parents and families, however, is the health and development of their children. This includes the education and care received by their children. For some parents, this would mean making a choice between their careers or staying home to look after their child, while some may choose to seek assistance from foreign domestic helpers, grandparents and relatives, with others relying on child care services. As discussed in Chapter 2, early formation of parent-child attachment can have many benefits for the child in the long run, including increased confidence, independence, and 'social mobility,' and having learnt from parental interaction "how to manage their own feelings and behaviour" (Moullin, Waldfogel, & Washbrook, 2014).

As said in Chapter 2, AAP suggested that "children's early experiences are all educational" no matter the child care setting, it is vital that children are exposed to high-quality early education and care (Donoghue, 2017). Child care provided at home is equally important to child care service provided in centre setting. Also, based on the experiences of the six jurisdictions in the provision of child care services and views from stakeholders, service users, and non-users, Hong Kong may learn from their experiences and further improve the quality of its existing child care services. In this consultancy study, the consultant team has identified some potential ways to improve Hong Kong's current child care services with the aim to nurture the overall well-being of child development and respond to the unique needs of modern families and parents in Hong Kong.

Current barriers to achieve high-quality child care services in Hong Kong include inadequate space provision, financial support, staff education, and caregiver training. Recapturing from Chapter 3, the short term positioning should focus on ***home-based care and volunteer-based care services,*** more training is suggested for improving the parenting skills and volunteer carer's awareness towards child care. Also, more financial support should be put in place so that parents could afford centre-based care services. In terms of long-term positioning, focus would lie on ***centre-based care services*** and a periodic review of the regulation and monitoring system. More support should be invested to ensure that enough space is provided for child care centres, proper training and more career development and advancement opportunities for child care workers, to improve the staff-to-child ratio and the centre environment, and to employ more professionals. With the increase in resources allocation, more aided child care places should be made available to address the various needs of parents and to provide them with the option that is most suitable for them. Review of the regulation and monitoring system can also enhancing the efficiency of centre-based and volunteer-based care providers.

Based on this study and the current positioning of child care services as reviewed and analysed, a summary of recommendations in the short-term, long-term and others are proposed in the below table.

Table 6. 1 Recommendations and others for improving child care services in Hong Kong

Recommendations for offering high-quality child care services in Hong Kong	
Short term	1. Increase resources allocation/investment in child care services. 2. Provide more subsidies and relax the application threshold for fee subsidy. 3. Improve the qualified staff-to-child ratio for children aged 0 to under 3. 4. Upgrade and improve the qualification and training for child care workers as well as offer training for home child carers. 5. Encourage effective dissemination of information on child care services to potential users. 6. Improve the service quality of NSCCP. 7. Re-position and re-organise MHCCCs. 8. Review the distribution of OCCS.
Long term	1. Enhance the quality of child care services by embracing and incorporating the elements of child development and care in its future development as in other jurisdictions. 2. Establish an appropriate planning mechanism and review continuously in order to have sufficient places for child care provision. 3. Upgrade and enhance the monitoring system, financial management procedures and guidelines (including administrative support and streamline of cost control) to facilitate the development of centre-based child care services. 4. Develop a set of quality indicators for monitoring and assessment based on child development and referencing from international experiences. 5. Explore the feasibility of developing a more efficient and cost effective financing model to cater for different types of families to increase its coverage and enhance cost effectiveness. 6. Conduct evaluation on child care services on a regular interval to measure its development for continuous improvement.
Others	
	1. Promote a family-friendly working environment and integrate with other welfare policies such that more holistic support can be provided to families with children.

Each short-term item is explained below in section 6.1, long- term in section 6.2 and others in section 6.3.

6.1 Recommendations in the short-term

1. ***Increase resources allocation/investment in child care services:*** In Hong Kong, parents are currently paying 80% of the costs for aided CCCs and 100% for non-aided CCCs. The Government is suggested to increase its resources allocation in child care services. Any enhancement of child care services for promoting the well-being and development of children can certainly be seen as an investment rather than an expenditure. Nevertheless, a built-in component of cost effectiveness of any new measures should be put in place. The

commitment of the Government on child care services should not be measured by the amount of increase in subsidy only, but by its effectiveness as well.

2. ***Provide more subsidies and relax the application threshold for fee subsidy:*** More subsidies should be given to families in need and the subsidy threshold should be relaxed. With the high cost of child care services in Hong Kong, the Government does provide financial assistance to parents with low income. But to be eligible, families must demonstrate their "social needs". This "social needs" group may already be a group of marginalised people needing financial assistance. Combining both the low income and the "social needs" assessment is too stringent for many families who need assistance to qualify for financial aid. To support more families in need, the Government should lower the conditions required for receiving subsidies, such as providing subsidies to families whose children do not receive full-day child care service in CCCs, and relax the adjusted family income level which currently is deemed ineligible under KCFRS which is administered by SFO. At present, working wage is relatively low, the opportunity cost of staying at home is relatively low after taking into account the relatively high child care service fee for low income families. If the coverage of subsidy could be extended, this would help ease the financial burden of the more needy families. The provision of child care support to needy families can reduce the poverty rate of these families based on overseas experiences.

3. ***Improve the qualified staff-to-child ratio for children aged 0 to under 3:*** The finding of this study indicated that there is no international standard on staff-to-child ratio. Currently, Hong Kong lags behind in the qualified staff-to-child ratio amongst the jurisdiction reviewed. The present qualified staff-to-child ratio for children aged 2 to under 3 is 1 CCW to 14 children (1:14) and it is proposed that in aided child care centres, the manning ratio be changed to 1 CCW for every 11 children (1:11) by drawing reference to the qualified teacher-to-pupil ratio in KGs. For children aged 0 to under 2, it is proposed at least 1 CCW to 6 children (1:6) instead of the current 1 CCW to 8 children (1:8) to be adopted as a short-term measure with references to the jurisdictions reviewed. For the longer term, the staff-to-child ratio is suggested to be gradually improved.

   However, deliberation should be taken into account of the sudden need for CCWs who might not be available in the market for a successful implementation. The Government should ensure that infrastructure is in place and that there is a continual supply of qualified workforce in the child care industry. It should also be noted that according to Perlman, et al 2017, for the assurance of quality of care, that it is more important to focus on continually improving staff training and quality of services than just the ratio itself. It should be further highlighted for the Government to draw on learnings from South Korea, Finland and Sweden as mentioned in Chapter 2.

4. ***Upgrade and improve the qualification and training for child care workers as well as offer training for home child carers****:* The quality of child care services should be further improved by upgrading the qualification and training for CCWs in CCCs. When compared to the qualification of staff working in ECEC centres in Finland or Sweden where their entry level is having completed a longer period training of 3 years either at a university or polytechnic college whereas Hong Kong is a higher diploma qualification, a 2-year post-secondary school training programme. The longer time spent in pedagogical training implies the depth of child care, education and development knowledge and skills acquired by the individual. In Japan, child care staff are either called "KG teachers" or "nursery teachers", after completing

2 years of training and following an induction programme, again this shows a higher qualification and more-equipped of staff. However, compared to the entry level in South Korea which is a 1-year training course, Hong Kong is better equipped and qualified. Nonetheless, providing a professional career and an attractive salary are the essential ingredients to maintain high-quality workforce. Discussion and planning should be held with tertiary and/or post-secondary institutes to increase the enrolment of training programme of CCWs. For home-based child carers under NSCCP and volunteer child carers of MHCCCs, the Government should work with service operators to offer training in attaining the necessary knowledge and skill to promote every aspect of child development. There should be a programme in place which would utilise the existing talents and experiences of current service providers and encourage existing staff (CCWs) to obtain professional qualifications for further improvement. The Government can incentivise the service providers to raise their level of professionalisation, by employing staff with more knowledge and skills, e.g. completion of internship programmes, and by providing further training for the current staff. Further, qualifications of new staff should gradually be improved, so that over a certain period of time, a certain target percentage of CCWs in CCCs with degree level qualifications can be achieved. The degree level holders should be the core practitioners in CCCs while the less qualified can act as a supporting role. Certainly, the remuneration should be accordingly reviewed to reflect the improvement of the quality of CCWs.

For parents, grandparents, and foreign domestic helpers and other respite carers, the Government can provide some support and encourage NGOs to offer training courses to upgrade their knowledge and skills in child care. Some sorts of certificate recognising the completion of training course(s) should be provided for foreign domestic helpers to acknowledge their effort in improving their skill sets. Also, trainings could be strengthened to incorporate advanced knowledge in early brain development and early childhood development in prenatal classes and baby clinics for mothers and fathers in various stages.

5. ***Encourage effective dissemination of information on child care services to potential users:*** It is reported in this study that information on availability, accessibility and affordability are not readily available to current users or prospective users; and some parents even have no idea or do not even know about the existence of some child care services. Thus, there is a need for effective dissemination of information and promotion on child care services to the public, in particular potential service users. This can be achieved through distributing promotional materials to government departments/NGOs/relevant organisations and ensuring that they are placed in easily accessible and visible areas.

6. ***Improve the service quality of the NSCCP:*** Due to the volunteer-based nature of NSCCP, service users were not satisfied with the quality of care provided by home-based child carers. For home-based child care service, the service users are concerned much on home safety and protection for their children. It is suggested that training to home-based child carers be enhanced by service operators in order to improve the quality of care provided. At the same time, more recognition should be given to home-based child carers by increasing their incentive payment. Also, there should be some support in place to help improve the home setting of home-based child carers to make it more baby-friendly and with more stimulation.

7. ***Re-position and re-organise the MHCCCs:*** The overall utilisation of MHCCCs has been persistently low in recent years, in part due to the regularisation of the NSCCP in October 2011 and the volunteer-based nature which is considered to be unprofessional and it might

not be well received among parents. Considering the nature of MHCCCs being similar to centre-based care group of NSCCP, children aged 0 to under 3 could be arranged to receive home-based service of NSCCP through which more intensive and individualised care will be provided to them. To optimise the use of public resources, it is suggested that MHCCCs be converted to after-school care services for pre-primary children. As NSCCP has been extended to all 18 districts since October 2011, MHCCCs could be gradually phased out.

8. ***Review the distribution of OCCS:*** As some parents find OCCS useful in supporting their need for occasional child care support, it is recommended that re-distribution of existing OCCS places among the services units be reviewed on a regular basis, having regard to the supply and demand condition of different districts, should be maintained continuously.

6.2 Recommendations in the long-term

1. ***Enhance the quality of child care services by embracing and incorporating the elements of child development and care in its future development as in other jurisdictions:*** In other jurisdictions like Finland, Sweden and Australia, the philosophy underlying child care services is that every child should have the right to enjoy high-quality child care with the incorporation of discovery via play. Japan has established the integrated ECEC centres incorporating education and care in child care services for children aged 0 to 5. While the model of "ECEC" generally refers to services for children aged 0 to 8, Hong Kong could draw reference from the relevant elements from the model of "ECEC" in the long run in response to the global trend, while taking into account local contexts and the expectation of parents as appropriate. This can be done through training the current CCWs to equip them with more knowledge in development psychology, family sociology and creative activities to achieve the ECEC concept of educare integration. In order to design activities according to the children's development and ability needs, the existing approved training courses for CCWs/CCSs should be re-examined to ensure the training programmes in CCCs can bring out the best in children. The focus should be on exploration through play and how to build up relationship with other children to avoid advancing KG teaching to CCC stage. Activities such as writing, textbook learning should be discouraged.

2. ***Establish an appropriate planning mechanism and review continuously in order to have sufficient places for child care provision:*** This planning mechanism should consider not only equity in availability, accessibility and affordability of the services at spatial levels, but also the temporal demographic changes in demand over time. Currently there is no population-based planning standard of child care services provision in Hong Kong and this study tried to estimate the demand and planning ratios for child care services for children aged 0 to under 2 and 2 to under 3. As suggested in Chapter 4, the Government should take a greater role in service provision for the group aged 0 to under 2 group, i.e. providing 30 247 places or a planning ratio of 82 per 20 000 general population. But for the service provision for children aged 2 to under 3, the Government is to take a more balanced approach, i.e. providing 7 557 places or a planning ratio of 21 per 20 000 general population. Thus, for the overall planning for children aged 0 to under 3, the Government is recommended to adopt a planning ratio at 103 places per 20 000 general population. This should serve as a metrics for further consideration. It is suggested that a timely data-based dynamic planning mechanism which considers both demands across different groups, would also adjust the service supply to the changes of the child population in the coming decade.

This planning mechanism needs to be reviewed continuously to reflect the continual change of household composition in Hong Kong. The Government is suggested to make reference to the age-specific planning ratios in the estimation of demand for CCC places. Research findings mentioned in Chapter 2 have substantiated that the greatest cognitive gain from centre-based child care service is for children who start receiving the service at ages 2 to 3 rather than younger or older ages. Also, as mentioned in Chapter 3, parents who consider that the training programmes in CCCs are beneficial for their children, still apply for CCC places even in families where one of the parents are not working. Hence, the Government may include aided half-day places, in addition to full-day places, in the future planning of CCCs.

3. ***Upgrade and enhance the monitoring system, financial management procedures and guidelines (including administrative support and streamline of cost control) to facilitate the development of centre-based child care services:*** While it is clear that child care services, primarily for children under 3 are regulated by SWD, and KGs for children above 3 to 6 are under EDB, KG-cum-CCCs which have both CCCs and KGs are provided one-stop service by JOKC staffed with officers from SWD and EDB, and housed under EDB, collaboration between the authorities could be enhanced. More coordination and communication between EBD and SWD are needed to further enhance the administrative procedure so that the administrative workload of staff of KG-cum-CCCs could be reduced. If not unitary, clarifications should be made to the current and new staffs regarding the differences in policies housed under the two authorities.

   The Government provides subsidies to aided CCCs via several means and there is general acknowledgement on the need for performance control on the financial accounts. However, the administrative workload of CCCs associated with financial management could be quite demanding and it would be desirable if the Government can simplify the performance management process to ease the workload on the staff. It is further recommended that for the purpose of improving the service quality of the centres, the Government is advised to provide some flexibility to service providers in deciding on expenditure items within a broader category of spending. The aim, however, is still for the Government to have control on the expenditure, and at the same time give child care service providers some flexibility to reduce the amount of inefficiencies that are tied in with the spending.

4. ***Develop a set of quality indicators for monitoring and assessment based on child development and referencing from international experiences.*** A set of quality checklist should be developed to evaluate child care services with regard to the overall development and physical and psychosocial well-being of children. This would allow all services to have the same standard in quality care and attention for children and support for children's learning and development, physical and psychosocial health. An example of such a system is mentioned in Australia which is a national quality standard as part of the National Quality Framework (please see Appendix 15). It acts as a benchmark for early childhood education and care and is evaluated according to the following indicators: including educational programme and practice, children's health and safety, physical environment, staffing arrangements, relationships with children, collaborative partnerships with families and communities and leadership and service management. Currently in Hong Kong, service operators of CCCs are required to deliver the service in accordance with CCSO and CCSR, as well as the Operation Manual. For aided standalone CCCs, they are also required to comply with FSA and SQS so as to ensure service quality and facilitate the development of children.

While it is noted that different ordinances, regulations and standards provide different guidance on different aspects, since they are all about child care services, it would make it much easier to readers and people work in the child care industry to have all in one place. For example the SQS is solely a general standard implicated on any service operators but are not child care service specific thus operators have to follow multiple standards with various core values which might lead to inconsistency and difficult monitoring. The National Quality Standard in Australia presents an all-rounded framework as listed in the above in which a few of them were not mentioned explicitly in any of the agreements or manuals, for example relationship with children, partnership with communities and the importance of governance support and leadership, for a more detailed comparison please see Appendix 16. These are not necessarily practical guidelines but serve as a framework that would help operators in their initial stage of programme design and restructuring to be in compliance with the ECEC practice as well as more efficient monitoring and inspection by the Government.

5. ***Explore the feasibility of developing a more efficient and cost effective financing model to cater for different types of families to increase its coverage and enhance cost effectiveness:*** From the focus group interviews, data collection exercise and comments from the general public, it is found that there are some low-income families which could not afford the current cost of CCCs, while at the same time, some high-income families are willing to pay more for the same quality of child care services. The coverage of subsidies could be extended to support more needy families, and meanwhile, user's income-based co-payment methods should be explored with the collection of more data and analyses with the aim to achieving a more efficient and cost effective deployment of resources. The Government should also explore with the CCCs and KG-cum-CCCs for ways to extend their service for children aged under 2 as some of the existing non-aided CCCs do not offer services to children under the age of 2 but focus on children aged 2 to under 3 and most KG-cum-CCCs only target children aged above 2.

   In the short-term, subsidies should be increased for the CCCs and CCC portion of the KG-cum-CCCs, in order to reduce the financial burden on parents, and to ensure a stable and consistent provision of CCC places at KG-cum-CCCs.

   In the long-term, the Government can try to incentivise those centres to provide places for children aged 0 to under 2 or through subsidising users for using these places. In terms of financing these places, there could be different levels of subsidy in a gradient scale according to families' income as families of middle level income might be able to afford these places with a certain level of subsidy. This is similar to Finland's co-payment system where families of lower income receive the highest subsidy and higher income families receive the lowest subsidy, the subsidy can be provided in a gradient scale. It is also recommended the Government to explore the options of collaboration with the private sector with reference to South Korea and Japan for the provision of CCC places with the financing mode to be assessed when more data is collected. There is insufficient data on the users collected from the questionnaire/focus group interviews from the private sector to enable an informed decision in this study.

6. ***Conduct evaluation on child care services on a regular interval to measure its development for continuous improvement:*** Although the Government has made some modifications in child care services since the last policy promulgated in 1991, the principles in place are still following those set almost 27 years ago which is primarily care-oriented. This study has

responded to the social and economic changes which have changed the way people perceive child care services. Other jurisdictions have incorporated the concept of "ECEC" in their child care services for children aged 0 to 8 and offered children with quality child care. Hence, the Government of Hong Kong is encouraged to apply some best practices from overseas jurisdictions and adopt them as appropriate to the local context. Although the economic statuses, government systems, cultures and parental views regarding ECEC across the globe are all different, it is useful to extract the similarities and differences to gain further insights in improving child care services. Heavy presumptions were made regarding Hong Kong parental circle holding a perspective of "winning at the starting line". However in a recent survey conducted by the Institute of Asia Pacific Studies at CUHK, more than 59% of adults disapproved the above idea and 77.1% respondents were inclined to support children's right for a spacious and free development. But when respondents were asked about whether they have enrolled their children in any extracurricular activities, only 17.2% said they did not. There is significant ambivalence between parental concerns and social reality. In Singapore, although teachers believe a holistic approach is more important, parents prefers a more academic curriculum as pre-primary preparation (Costales, 2018). There is also a rising demand for South Korea parents to spend more in their children's education in order to "keep up with the competition" and many do not adhere to the Government's guideline of an all-play curriculum. The one jurisdiction that is greatly out of the social norm compare to Hong Kong is Finland. In Hujala's study in 2017, Finnish parents perspective on the three most important goals for early education are ranked as social, emotional and lastly cognitive. They invest heavily on the children's well-being and the development of social habits thus rarely send their children to after-school tutoring or institutions farther afield than a local one. This play and learning practice did not hinder the children's development or affect the Finnish's society, rather they continue to top one of the international student assessment across the globe (Barr, 2017), overthrowing Hong Kong society's concern of "winning at the starting line". Therefore, more regular researches and evaluation should be conducted to keep up-to-date with the universal child care policies and to gain insight from other jurisdictions.

6.3 Others

1. ***Promote a family-friendly working environment and integrate with other welfare policies such that more holistic support can be provided to families with children:*** The benefits for mothers and fathers to stay longer at home and provide care for their babies should be deliberated. There are some other practices, for example, flexible working hours, working at home and part-time employment have been widely practiced in other jurisdictions reviewed in this study in order to retain parents in the workforce. More family-friendly facilities and infrastructure, e.g. for breastfeeding and diaper changing rooms, should also be increased in the public space. All these efforts contribute to the well-being of the children.

Chapter 7 Conclusion

Since 2001, Hong Kong has been internationally promoting as "Asia's world city."[50] To truly enjoy this prestige and status, children, the most basic building blocks of society need to be nurtured for they are Hong Kong's future, carrying on the successes of the present. Each year Hong Kong welcomes 60 000 babies[51], who will become the pillars in the future. Although the Government has programmes and policies in place for child care, the consultant team has identified areas for improvement in child care services, taken from international good practices and fitted into Hong Kong's local context, from which the Government and the community at large can learn from.

All children, regardless of their family composition and who they live with and who their carers are would benefit greatly if they are provided with high-quality child care. Using GIS analysis, districts with greater shortage in child care services were highlighted and can be used as a guide for the Government to distribute additional resources and manpower. From the findings of the questionnaire and focus group interviews, more child care options can help alleviate the pressure on parents with long working hours. A goal is to assure parents that a balance can be achieved between their child care responsibilities and career obligation. This balance would mean that the quality and opportunities of one is not sacrificed for the other, and that both can be achievable. At present, some Hong Kong parents, due to insufficient child care services, have to make a decision to stay at home after giving birth to their child or delay/forgo their aspiration for child bearing. It is neither good for their mental health nor the wellness of the society.

There are both short-term and long-term recommendations, as well as other remarks for the Government to look at, which could be implemented at the operational level and the policy making level respectively. It is recommended that in the longer term, the Government might explore the possibility of collaborating with the private sector in providing child care services, particularly in communities that large populations of young couples expecting to have children or families already with young children with local partners on the private market. In terms of human resource planning, it is recommended to lower the staff-to-child ratio and that staff receive more competitive salaries, as well as more opportunities for career advancement, which is a form of motivation. The current regulatory system of dual government bodies in charge of CCCs, and CCCs attached to KG-cum-CCCs should be streamlined to ensure that there is good communication between them, for efficient and effective delivery of services. The financial mode can be modified, in order to charge parental fees and provide subsidies on a more extensive scale. Additionally, the Government can incentivise KG-cum-CCCs or leverage on the private sector to provide more child care places for children, in particular, aged 0 to under 2 group, to be targeted towards middle-income families. To support more families in need, the current threshold for fee subsidy should be relaxed so that more children from disadvantaged background can enjoy child care services.

The Government can consider drawing reference from the good practices of other jurisdictions and explore the feasibility of implementing them in Hong Kong for continuous long-term improvement, with the goal of making Hong Kong a liveable and enjoyable city for children to grow healthily and happily. Certainly, the provision of child care services cannot be done by the

[50] https://www.brandhk.gov.hk/html/en/AboutHongKong/AsiaSWorldCity.html
[51] Census and Statistics Department, 2018

Government only. It requires parents to do their fair share of looking after their children responsibly. It might require parents to make sacrifices and compromise of their present life style. Employers' support by providing a family friendly working environment is also crucial to make it possible. The consultant team hopes that the community as a whole can have a mind-set change to share some of the responsibility of looking after the future generation. While parents play a vital role in the upbringing of their children, it does make it easier for all parents if everyone in the community can and will make a difference by supporting others and contributing to the overall well-being of Hong Kong.

Appendix 1 Country reports of Finland, Australia, Singapore, South Korea, Japan and Sweden

This section comprises of summaries from the following commissioned country reports:

- Finland country report: Rotkirch & Meittinan (2017). *Finland - Early Childhood Education and Care.*
- Australia country report: Brennan & Adamson (Aug 2017). *Australian Early Childhood Education and Care.*
- Singapore country report: Lue, Fang (2017). *Singapore Early Childhood Education and Care*
- South Korea country report: Kim, A. E. H., (Feb 2017). *The Republic of Korea and its Childcare Policy: Development, Implementation, Effectiveness, and its Limitation.* Emery C (2017). Childcare in South Korea: Competition for Conventional Success and the Policy Implementation Gap
- Japan country report: Suzuki, Yoshie (2018). *Japan Early Childhood Education and Care*, May
- Sweden country report: Nyberg, Anita (2018). *Sweden – The Development of Early Childhood Education and Care.*

1.1 Finland[52]

Finland's existing philosophy and objective of child care services are for all children under the age of 7 to have a **right to early childhood education and care.** Previous focus was on the parents to entitle a day care service for their children. With the new ECEC Act in 2015, the perspective was shifted to that of the child, that is, for the child to have a right to education and care for development and growth. To align with this approach, the governing body of the ECEC services was moved from the Ministry of Social Affairs and Health to the Ministry of Education and Culture in 2013.

Children can start attending ECEC service from age 10 months, when the parental leave period ends. There are 3 types of child care services and they are described below.

- **Municipal ECEC services:** Municipalities have to ensure that all children who are in need of ECEC have a place within 4 months of the application. Services are provided to children of legal residents of the municipality. Those without legal residence are not entitled. The fee in municipal ECEC is set at a minimum €27 /month and maximum €290 /month. If the family income is lower than the minimum fee, the child will have the service for free.
- **Private ECEC services or private child minder:** Children using this service are entitled to the private child care allowance in the range of €63 - €172 / month. Low income families can apply for additional allowance.
- **Parent on home care leave on child home care allowance ("HCA")**: Many mothers stay home until the child is 1.5 to 2 years old. Mothers of higher education normally have shorter home care leave while longer home leave care are more common with less-educated families. HCA is a compensation paid to the child's family who does not use municipal day care at €338 /month. Low-income families can apply for additional allowance.

[52] Rotkirch and Miettinan, Finland – Early Childhood Education and Care, 2017

The staff-to-child ratio is mandated by law. For day care, the ratio is 1:4 under 3 years old and 1:8 for children aged 3 or above (before 2016 it was 1:7). The maximum number of children in a group is 12 for 0 to under 2, and 24 for older children. ECEC staff responsible for children must have appropriate training with vocational upper-secondary qualification in relevant fields, e.g. social welfare and health care. One in three of the staff in the ECEC centres must have a higher education degree composed of at least either bachelor's degree from a university or degree from polytechnical school (3 years).[53] The minimum qualification for kindergarten teacher is a bachelor's degree in Education or in Social Science. Other staff in ECEC is expected to go through a vocational upper secondary qualification in social welfare or health care. Pre-primary education is provided by kindergarten teachers with a Bachelor or Master of Education degree or a class teacher with a Master of Education degree.

It should however be mentioned that there are also some drawbacks in Finland's child care system. First, owing to the distribution of day care centres is not sufficient in some rural areas, the right to day care system and the early education is not equally distributed to children (Onnismaa & Kalliala, 2010). Second, the child care workers still lack qualification, a proportion of education providers in some centres not having the qualification of a teacher. Third, due to the low wages, low social status, and lack of developmental path, the sustainability of the ECEC service is questionable.

1.2. Australia[54]

The main objective of Australia's spending on early childhood education and care is to enable workforce participation. Supporting child development is but a secondary objective. At the federal level, the Department of Education and Training oversees the training and regulation of ECEC services, while the Department of Human Services is responsible for the funding. The Department of Education coordinates with state government, generally the respective department of Education, to supervise and monitor approved services, and the approved services are those eligible to receive subsidies from the federal government. The Australian Children's Education and Care Authority supervises the implementation of the National Quality Framework. The National Quality Framework was introduced in 2008 under which ECEC services operate. Features of The National Quality Framework include four components:

- The governing arrangement of ECEC;
- A benchmark standard system of early childhood programmes by the slogan of **Belonging, Being, and Becoming,** where it provides an overarching guide to learning and development of children aged 0 to 5;
- A five-point rating scale to rate the quality of care; and
- A national system to regulate and enforce the benchmark standard

There are several types of regulated services for children and they are described below:

1. Long day care: a centre-based service providing care and education from birth to school age.
2. Pre-school/kindergarten: provide care and education before the children attend full-day school. In some states, pre-schools or kindergartens are provided within the schools.
3. Family day care: a service providing education and care in the homes of the registered carers.
4. Budget Based Funded Programme: a national programme mostly in regional, remote communities to meet the needs of children and their families.

[53] Source: https://eacea.ec.europa.eu/national-policies/eurydice/content/early-childhood-education-and-care-25_en
[54] Brennan and Adamson, Australian Early Childhood Education and Care, Aug 2017

5. In-home care: a flexible form of child care in the child's home by an approved educator.
6. Non-regulated care: Care by nannies or au pairs (young domestic assistants from a foreign country who live with and work for the host family). This type of service receives much debate as to whether the Government should increase financial and regulation support.

Under the National Quality Framework, the staff-to-child ratio for centre-based services is 1:4 for children aged 0 to 24 months, almost all States have 1:5 for the children age 24 to 36 months, and 1:10 / 1:11 for children aged over 36 months.

The minimum qualification for all staff working at the ECEC services is to have a Certificate III. Even though not required, at least 50% of the ECEC staff who work directly with children either already attained a diploma or they are studying to obtain a diploma. Contingent on the size of the centre, there must be one or more degree-qualified early childhood teacher.

Prior to July 2018, there were 2 types of subsidy systems: Child Care Benefit ("CCB") and Child Care Rebate ("CCR") described below:

- CCB is a means-tested subsidy for children enrolled in approved long day care, family day care or in-home care centres. The benefit is on an hourly rate available to eligible families according to family income. Low-income family can apply for a maximum of AU$4.24 per hour or AU$212 per week and the benefit decreases as income increases. Families using registered care such as nannies can apply for AU$ 0.7 per hour or about AU$35.95 per week.

- CCR is non-means-tested and is only available if one parent meets the threshold. CCR covers 50% of the out-of-the pocket costs, paid by the parent. Even if the family is not approved for CCB because income exceeds the test, CCR is paid automatically following a CCB application.

A new system came into effect in July 2018, the Child Care Subsidy which replaced the CCR due to the automatic payment of CCR to CCB applicants being criticised for not having properly checked the needs of the families and thus seen as wasting government money.

Nonetheless, it should be mentioned that there are also some drawbacks in Australia's child care system. First, the education curricula for the pre-schooler's teacher do not match the changes in duty, for example, a teacher's duty is not only for teaching but also interactions with the parents and managing the activities of the classroom. These are omitted in the curricula of ECEC. Second, the cooperation between pre-schools, primary and secondary schools should be further improved. Currently, the pre-schools are regulated under the Federal Ministry of Family and Youth, whereas primary and secondary schools are regulated under Federal Ministry of Education. The teachers there suggested that the challenges of adapting into the new environment do exist in the transition between pre-schools and formal schools. Third, the ECEC programme in Australia lacks evaluation on its curricula on the participation for the 3 year-olds and particularly children from disadvantaged backgrounds and Indigenous Australia children, therefore the effectiveness of the current curricula is still unclear to these targeted groups (Warren et al, 2016). Fourth, different ECEC services are of different quality or focuses, and there is no shared value among different ECEC services.

1.3 Singapore[55]

While the existing policies in child care position children's care and education as the family responsibilities by promoting agendas like **"pro family" and "family values**", since 1983, the Government has made tremendous efforts in uplifting programmes in child care support. The goal of the Government is to provide every child with **"a good start in life and a bright future**", and to prepare children for the labour market. Therefore, investing in early childhood education and care ("ECEC") was made a priority.

There are 2 types of ECEC programmes for children under the age of 7. They are Child Care Centres and Kindergartens and they are described below:

> **Child Care Centres** offer care services and pre-school programmes for children of 18 months to 7 years old. There are also centres providing infant programme for children of 2 months to 18 months old. The services are full-day, half-day, together with flexible programmes to cater for working parents with different schedules.
>
> **Kindergartens** are pre-school programmes for children aged 2 to under 7. They consist of playgroup, pre-nursery, nursery, and kindergarten (K1 for 5 year-olds and K2 for 6 year-olds).

Since the set-up of Early Childhood Development Agency ("ECDA") in April 2013, they oversee the licensing and registration of Child Care Centres and Kindergartens which were previously supervised by the Ministry of Social and Family Development and the Ministry of Education respectively. The operation of Child Care Centres and Kindergartens are carried out via 2 schemes where the Government provides funding support for operators to provide quality ECEC services: Anchor Operator Scheme and Partner Operator Scheme. In addition, the Ministry of Education manages public kindergartens provided to Singaporean citizens.

In terms of staff qualification and staff-to-child ratio at child care centres, the minimum requirement for the staff is to have 5 "O" level credits including English Language and a Diploma in Pre-school Education Teaching. The staff-to-child ratio is also stipulated at:

1:5 for children of 2 to 18 months;
1:8 for children above 18 months to 30 months;
1:12 for children above 30 months to 3 years;
1:15 for children above 3 years to 4 years.

Singaporean children enrolled in approved ECDA centres are eligible for a basic and an additional subsidy. In addition, children of low-income families from age 18 months to 7 years are also eligible for Start Up Grant and Kindergarten Financial Assistance Scheme which provides further financial aid on top of the basic and additional subsidy. Furthermore, Singaporean citizen children born on or after January 1, 2015 get an automatic Baby Bonus Cash Gift. The new born is also qualified for Medisave Grant to cover the premium for Medishield Life Coverage from birth, a mandatory basic health insurance.

Nevertheless, again, it should be mentioned that there are also some drawbacks in Singapore's child care system. First, there are no fixed curricula provided by the Government, thus, the

[55] Lue, Fang (2017). Singapore Early Childhood Education and Care

quality and the content of each centre or school differ. Second, though the Government subsidises a proportion of the tutor fees, the fees for quality pre-school still remain a challenge for the underprivileged. Third, apart from the private sector, voluntary organisations would also set up schools for the younger generation, but since they are targeting the financially non-affordable families, this leads to their financial resources barely sustainable for operation, and the costs of employing quality teachers would be of great difficulty. Therefore, the voluntary established schools might gradually be marginalised. Fourth, the salary of a professional pre-schooler teacher differs widely from school to schools, as well as other privileges like annual leave. As a result, the turnover rate of some professional and quality teachers is very high. Fifth, due to the unclear and diverse duties in pre-school teachers, their image remains unprofessional. Most of them are regarded as the duty of a babysitter which would hinder people from entering this occupation.

1.4 South Korea[56]

The Government of South Korea did not play an active role in child care support until the early 2000s when the urbanisation of nuclear family and agenda on female empowerment raised the issue of child care on stage. In 2004, the Government launched a systematic and comprehensive child care programmes with three original objectives which were criticised to help only certain parents. However, due to the shift in trend and the advocacy for child rights, it later included a fourth rationale.

- Incentivise more births
- Inclusion of women with children at the labour force
- Improvement of gender equality by empowering women and promoting their independence
- Growing generation must be provided with the service (add-on)

Another feature of the programme is the Government providing monetary support to parents with children aged 0 to 5 to help grow the industry. In March 2013, the **Universal Child Care** scheme was implemented. Parents with children in the age group of 3 to 5 have completely free service so long as the children are registered and use a certain credit card which the Government deposits the fee in. In addition, the Government provides cash for parents with children aged 0 to 5 for spending on child-raising items such as diapers and milk powder. For the newborns, the cash is ₩200,000 per month; 1 year olds, ₩150,000 per month; 2 to 5 year olds ₩100,000 per month. Families which do not send children to child care centres also receive cash allowance.

The Nuri curriculum was introduced in 2012 in attempt to integrate the early childhood education and the child care system to standardise their quality. The curriculum is implemented in five areas to promote healthy environment for children to grow and develop holistically. For example, for physical activity, children are lead to do basic exercises that help improve self-awareness and are taught important family values; for experience in art, children are encouraged to discover beauty and express themselves through art. In order to ensure staff quality, the qualification of the day care teachers are monitored. There are three grades of day care teachers mandated by law, ranging from Grade 3 to Grade 1. Grade 3 certification is obtained by successful graduation from high school and completion of an education/training programme at an institute designated by the Ministry of Health and Welfare Affairs. Grade 2 can

[56] The Republic of Korea and its Childcare Policy: Development, Implementation, Effectiveness, and its Limitation, Ehyun Amy KIM, Feb 22, 2017, Childcare in South Korea: Competition for Conventional Success and the Policy Implementation Gap, Emery, C. 2017

be attained either by meeting all of the requirements for Grade 3, along with 2 additional years of child care experience and additional training, or by a college degree in a child care related major. Grade 1 can be obtained via 3 years of additional experience full time in child care plus career training on top of the requirements of Grade 2, or, all of the requirements for Grade 2 plus a master's degree plus one year of experience full time in child care or additional training. In many day care facilities most teachers have Grade 3 certifications. In 2013, 25% of the public child care centre workers have obtained a 4-year university education.[57] On the other hand, there are elite facilities where more than half of the teachers have masters and doctoral degrees in child studies. State-run child care tends to be higher in quality but has long waiting lists. There were 98 000 children on day care waitlists in 2015 (Reuters, 2015).

Due to the lack of adequate budget and expertise in child care, the Government decided to encourage commercialisation and privatisation of the sector. Until 2012, the Government covered up to 25% of all construction costs of the child care centres. There was also tax reduction for the private child care business. The Government also reformed the licensing process by shortening the application lead time where it used to require 6 months for 10 documents, but reduced to 3 months with 5 documents. The process of obtaining the minimum qualification requirement as a third degree child care instructor (normally with graduation from secondary school and one year training programme) has also become easy; with only the need to complete a two-weeks online course and passing an easy exam. The aim was to fulfil the demands in the child care fields created by the surge of the private child care industry.

For children aged 0 to 5, 68% are in some form of day care or kindergartens. With about 40 000 day care centres in South Korea, 8.9% are public and 84.8% are private centres or in households. It is generally known that public centres are of higher quality. Day care centres (for children aged 0 to 3) are supervised by the Ministry of Health and Welfare, while kindergartens (for children aged 3 to 5) are monitored by the Ministry of Education.

Despite all centres being monitored by CCTVs, there are however frequent reports of child abuse. There are also reports of poor working conditions and over workload at child care centres and kindergartens, thus resulting in high turnover.

It should further be mentioned that there are also some drawbacks in South Korea's child care system. Although the **Universal Child Care** scheme seems to generate good statistics in terms of child care centres and job creation, it fails to gain the confidence of the public in quality of child care and also fails to improve the fertility rate. A major criticism of the policy is the lack of other policies to support those children aged 6 to 8. Child care is provided for children aged 0 to 5, the usual age for elementary school is 8, there is a two-year gap in between not covered by any policy with similar functions. The over reliant on the private sectors further resulted in poor quality of instructors, poor treatment on the children and poor food quality. Since 2004, the fertility rate is about the same, suggesting that there are other influencing factors than the child care system. Gender discrimination is still ever-present in the workplace, attributing to the women considering twice before giving birth after years of hard-earned achievement.

[57] Park and Park, (2015)

1.5 Japan[58]

The Japanese government has taken the role of providing general curriculum guidelines and regulations for the health and safety for young children aged 0 to 5 receiving refined and holistic care and education. However, it has also adopted a 'hands-off approach' in these child-centred programmes, granting individual child care facilities authority and flexibility to design and put into practice what they see fit with targeted group of children, with a goal of nurturing human relations and developing children's ability to perform function.

Traditionally, the Japanese ECEC system has been separated into two distinct institutions, kindergarten and nursery, with each of them placed under a different government ministry and follows different legislations:

- Under the Ministry of Education, Culture, Sports, Science and Technology ("MEXT"), the Japanese kindergarten education focuses on child development and eligible for all children aged 3-5.
- Day nurseries, under the Ministry of Health, Labour and Welfare ("MHLW"), have expanded their services for children aged 0-5 to include infant day care, extended hour day care and night time day care to meet the modern social life and labour force trends. Children are only eligible to apply if child care is absent at home.

Since 2006, integrated ECEC centres have been developed for children aged 0 to 5. Its goal is to relieve the stress of working parents by offering more flexible hours and providing both academic and child care elements. A sharp increase of 272% from having 762 integrated ECEC centres in 2011 to having 2,836 in 2015 was recorded. The Cabinet Office has direct responsibility over the integrated ECEC centres, as well as authority over MEXT and MHLW, which indirectly regulates both kindergarten and day nurseries.

In 2016, 71% of 3-year-olds, 86% of 4-year-olds, and 95% of 5-year-olds, were enrolled in pre-primary care and education. The percentage is lower for younger children aged 0-2, with day nursery enrolment rates of 26% for this age group. The lower enrolment rate in official nurseries among younger infants is normally accounted to the maternal leave. Mothers are entitled to 14 weeks of maternity leave: six weeks before birth, and 8 weeks after birth with 67% of salary. They are also entitled to time off or days off for medical checks during pregnancy within 12 months of childbirth, and two 30-minute breaks off during a work day to accommodate for child care. Another option is to take child care leave until the child turns one year old and is paid for 50% of regular wages.

Japan's pre-primary services are largely privatised, with 73% of students in private, independently run kindergarten, day nurseries or integrated ECEC centres. This is because pre-primary education is not mandatory under the Japanese public education system. Since the Japanese government has adopted the hands-off approach, the regulated staff-to-child ratio, operating hours, the range of extra services vary a lot among specific municipalities. The maximum ratio in kindergarten is 35 students per one teacher. On the other hand, the staff-to-child ratio in day nurseries depends on the child's age as shown below:

[58] Suzuki, Yoshie (2018). Japan Early Childhood Education and Care, May

Age	Staff-to-child ratio
0 to under 1	1:3
1 to under 3	1:6
3 to under 4	1:20
4 to under 5	1:30

Regarding staff qualifications, pre-primary teachers have normally received and passed a two-year training programme. Kindergartens and day nurseries have separate teacher qualifications, 'kindergarten teacher license' and 'nursery teacher qualifications'. Care givers of children aged 0 to 2 at integrated ECEC are required to obtain 'nursery teacher qualifications' whereas teachers who teach children aged 3 to 5 are required to have both qualifications.

A number of challenges are encountered within the Japanese ECEC system. The integrated ECEC centres aim to provide flexible hours to fit in with working parents' schedule. However, it is concerned that the quality of education may deteriorate if kindergartens operate for more hours, leaving limited time for teachers to prepare for and review their classes. The longer hours may also compromise the well-being of children who find it difficult or stressful to be placed away from home. Besides, Japan relies greatly on private funding for ECEC expenditure. Many children enrolled in private kindergartens and day nurseries do not receive much government funding, adding a heavy financial burden on families. Furthermore, child abuse at home in Japan has become a severe issue in recent years. This can be explained by mothers being pressed into caring for both young children and older relatives. Together with financial and emotional stress, it consequently triggers an increase child abuse cases, with over 100 000 cases reported in 2016. Parents were thus encouraged to place their child in licensed centre-based care to provide support to the parents and prevent child maltreatments. However, with the poor quality in uncertified centres and shortage in certified centres, it serves as an overwhelming issue yet to be resolved the Japanese government.

1.6 Sweden[59]

For over 40 years, the Swedish Parliament has given high priority to ECEC that focuses on providing good conditions for the children in order to support and stimulate their holistic development. It aims to encourage children's interaction and expressive skills, as well as assisting them in acquiring knowledge and responsibility through play and discovery. Under the Ministry of Education and Science since 1996, ECEC has been run by municipalities and financed by the central government, municipalities and parental fees to provide full coverage and high-quality child care services to families.

There is a variety Swedish ECEC services designed for children ranging from 1 to 7 years old, as described below:

- **Public-financed family day care** is a standardised and regulated child care service specifically designed for more traditional urban families and isolated families in the rural areas or small

[59] Nyberg, Anita (2018). Sweden – The Development of Early Childhood Education and Care

towns. Municipal child-minders provide care in their own home and are flexible to fit in with parents' schedule and their need.

- **Day care centres**, a more popular option comparing to public-financed family day care, provide services for all children from 1.5 to 7 years old. Municipalities are also liable to offer places for children aged between 1 and 5 whose parents are unemployed for at least 3 hours a day. There are 91-97% of children aged 2 to 5 and 50% of children aged 1 in publicly financed child day care centres.
- **Universal pre-school** provides free schooling for all children aged between 3 and 5 for 3 hours a day during school terms. It is mandatory by municipality but children can participate voluntarily. Currently, there are 98% of children aged 6 in **pres-chool classes** and government also announced that starting from the fall of 2018, it becomes mandatory for all children aged 6. The **open pre-school** is an alternative for children of at-home parents, where most of them are free of charge.
- **Parental co-operatives** are a small percentage of pre-schools and day child care centres privately run by non-profit organisations such as by parents, where they work on rotating basis, or by corporations or churches. The parental co-operatives are required meet the standard of public child care and fees are not allowed to deviate from the municipal forms.

The child care programme has expanded to include paid maternity and parental leaves. Sweden's parental leave after the birth of child has existed since 1974. Parental insurance paid by employer taxes covers 480 days of parental leave with 80% of the salary. The parental leave can be divided between the two parents or are transferred to each other. However, there is specific 30 days of 'mother's or father's month' that is non-transferable.

There are currently no national standards of staff-to-child ratio, but it is mandatory to monitor it continuously by each municipality. The average staff-to-child ratio in pre-schools and family day care has fluctuated over the years and it was 1:5.2 by 2016.

For pre-schools and day care centres, staff are divided into two main groups in terms of their qualifications: pre-school teachers and day care attendants. Pre-school teachers are required complete a 3.5-year pedagogical training programme at universities. They work closely with qualified day care attendants, who are required to obtain an upper-secondary qualification, which is a 3-year programme including 15 weeks of mandatory practical placement. Day care attendants' main role is to support and assist pre-school teachers. Currently, there is no centrally developed education training programme for family day care providers at home. However, it is recommended by the National Board of Health and Welfare that they should undergo training equivalent to that of a day care attendant in pre-schools, i.e. an upper-secondary qualification. Many municipals offer 50-100 mandatory hours training as an introduction to family day care occupation and provide guidance through specifically employed supervisors. Family day care home is also inspected and approved by the local authority.

Despite Sweden's child care system is often quoted as the "the gold standard" (Ricci, 2015), and many countries use it as a benchmark, it has its challenges. Due to the high enrolment in Swedish day care services, parents may be pressured and believe that it is necessary to conform to the child care system. Over-reliance on these programmes may hinder quality parental abilities, their choice in how to care for their children and the bonding with their children. Another drawback in the Swedish ECEC system is the inconsistency of the staff-to-child ratio. As mentioned,

there are no national standards of staff-to-child ratio, and further, day care staff are one of the top three categories of sick leave in Sweden, without replacement staff. This exposes children to groups of 17 with only one or two staff for several hours (Himmelstrand, 2015). One possible way to rectify the problem is to merge smaller groups together into larger groups, ensuring flexibility and quality of care in case of staff taking sudden leave.

Appendix 2 The means test and levels of assistance[60]

- The Student Finance Office ("SFO") uses the Adjusted Family Income ("AFI") mechanism as the means test to assess the applicants' eligibility and level of assistance. The AFI mechanism is based on the following formula:

$$\text{AFI} = \frac{\text{Gross annual income of the family}}{\text{Number of family members} + (1)^*}$$

* For single-parent families of two to three members, the "plus one factor" in the denominator of the AFI formula will be increased to "two".

- Gross annual income of the family includes the annual income of the applicant and his/her spouse; 30% of the annual income of unmarried child/children residing with the family if applicable and the contributions from relatives/friends if applicable.
- Members of a family normally refer to the applicant, his/her spouse, the unmarried child/ children residing with the family and the dependent parent(s) who are supported by the applicant and/or his/her spouse.
- There are three levels of fee remission, namely 100%, 75% and 50%. The AFI eligibility benchmarks for 100%, 75% and 50% fee remission are as follows:

Applicable to Financial Assistance Scheme for Pre-primary Students	
2018-19 school year - AFI Groups (HK$)	Levels of Assistance
0 to 39,182	Full remission (100%)**
39,183 to 47,996	3/4 remission (75%)
47,997 to 75,764	1/2 remission (50%)
Over 75,764	Ineligible (applications not successful)

** AFI thresholds for full level of assistance for 3-member and 4-member families are $47,434 and $43,640 respectively in the 2018/19 school year. For 2-member single-parent families and 3-member single-parent families, they are regarded as 3-member families and 4-member families, respectively, for calculation of the AFI and the level of assistance.

[60] https://www.wfsfaa.gov.hk/sfo/en/preprimary/kcfr/general/assessment.htm

Appendix 3 Criteria for assessing social needs[61]

Category (A) Children who cannot receive proper care at home as a result of one parent working full-time and the other working 104 hours or more in a month

Category (B) Children whose parents are chronically ill, disabled, or in long-term hospital care –

i Children with a parent in hospital who is likely to require long-term hospitalisation or long period of convalescence after discharge

Ii Children with a parent suffering from ill health such as carcinoma, kidney disease, tuberculosis, venous cardiac disease, etc

iii Children with a parent who is physically or mentally handicapped or mentally ill

Category (C) Children of single-parent families or children from broken families –

i Children whose parents are widowed, divorced, separated or deserted

ii Children of unmarried parents, i.e. born out of wedlock, not under the care of both parents

iii Orphans/semi-orphans under the care of relatives

Category (D) Children themselves having a need for full-day care –

i Mild-grade mentally retarded children and those having a slight physical handicap admitted under the Integrated Programme (cases usually referred by medical staff)

ii Children being members of twins and triplets etc. (at least one other child under 6 must be resident in the family)

iii Children who are victims of child abuse

iv Children with a parent who is a drug abuser or alcoholic or is aged, and is considered as being unable to exercise proper care of the children

v Children with a parent or guardian in prison or absent from home or other valid reason for long periods of time

Category (E) Children considered to have the need for care because of special conditions of other family members –

i Children with parents who have to take care of a family member who is physically or mentally handicapped, chronically ill, senile, aged (over 70), or incapable of self-care

Category (F) Children from large families –

i Children with two or more siblings (at least two children aged below 6 must be resident in the family)

ii Children from families with four or more children aged below 12 (at least three children must be resident in the family)

Category (G) Other cases recommended by social workers - Any child referred and recommended by social workers

[61] Working Party on Harmonisation of Pre-primary Services, Consultation Document, Education Department, Social Welfare Department, April 2002

Appendix 4 Maps and spatial distributions of child care centres

Maps and figures

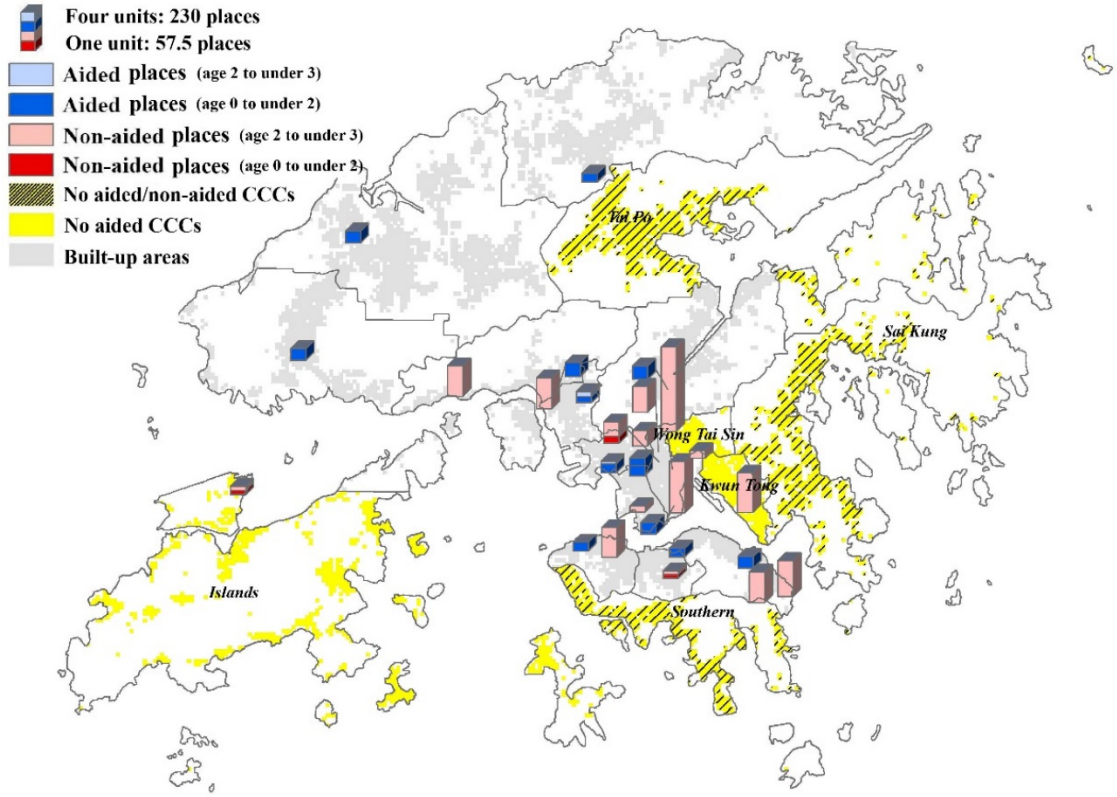


Figure 4.1 Spatial distributions of aided and non-aided standalone CCCs, and their places in Hong Kong

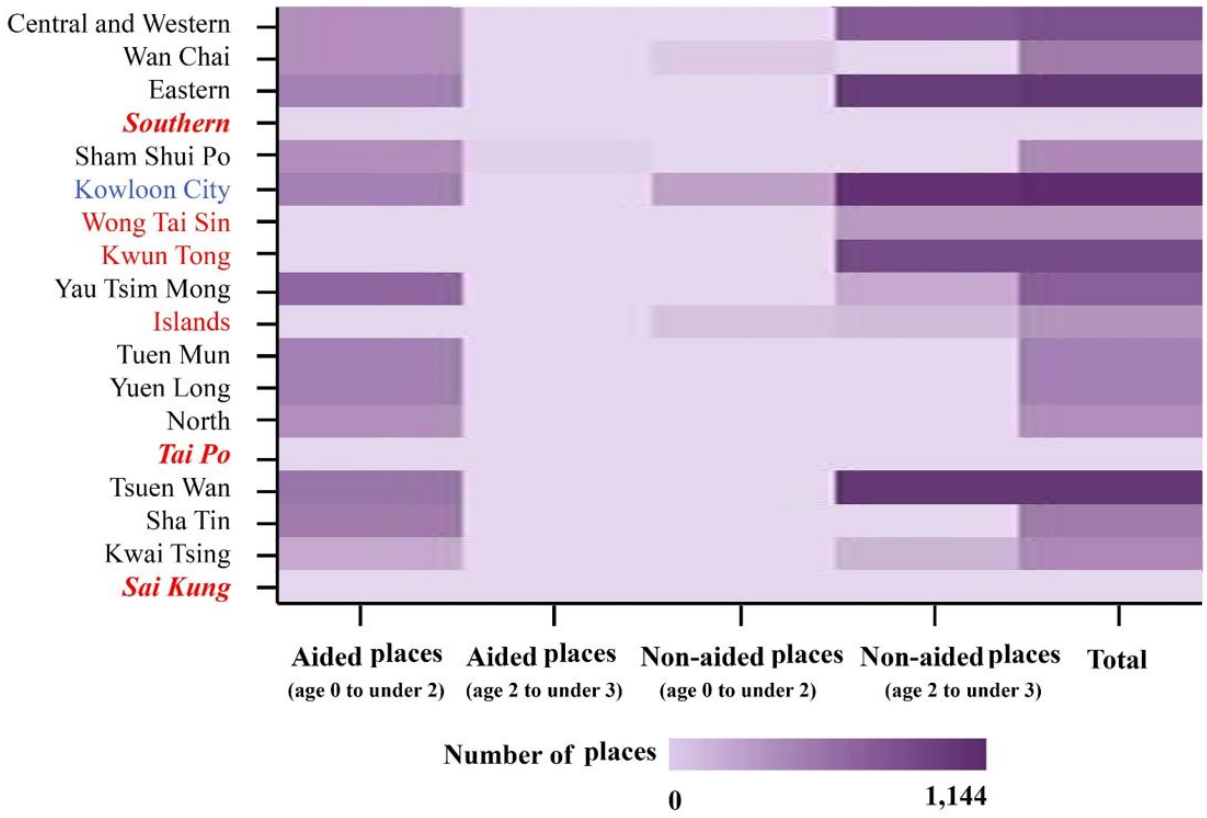


Figure 4.2 Heat map of the places of aided and non-aided standalone CCCs for children 0 to under 2 and 2 to under 3

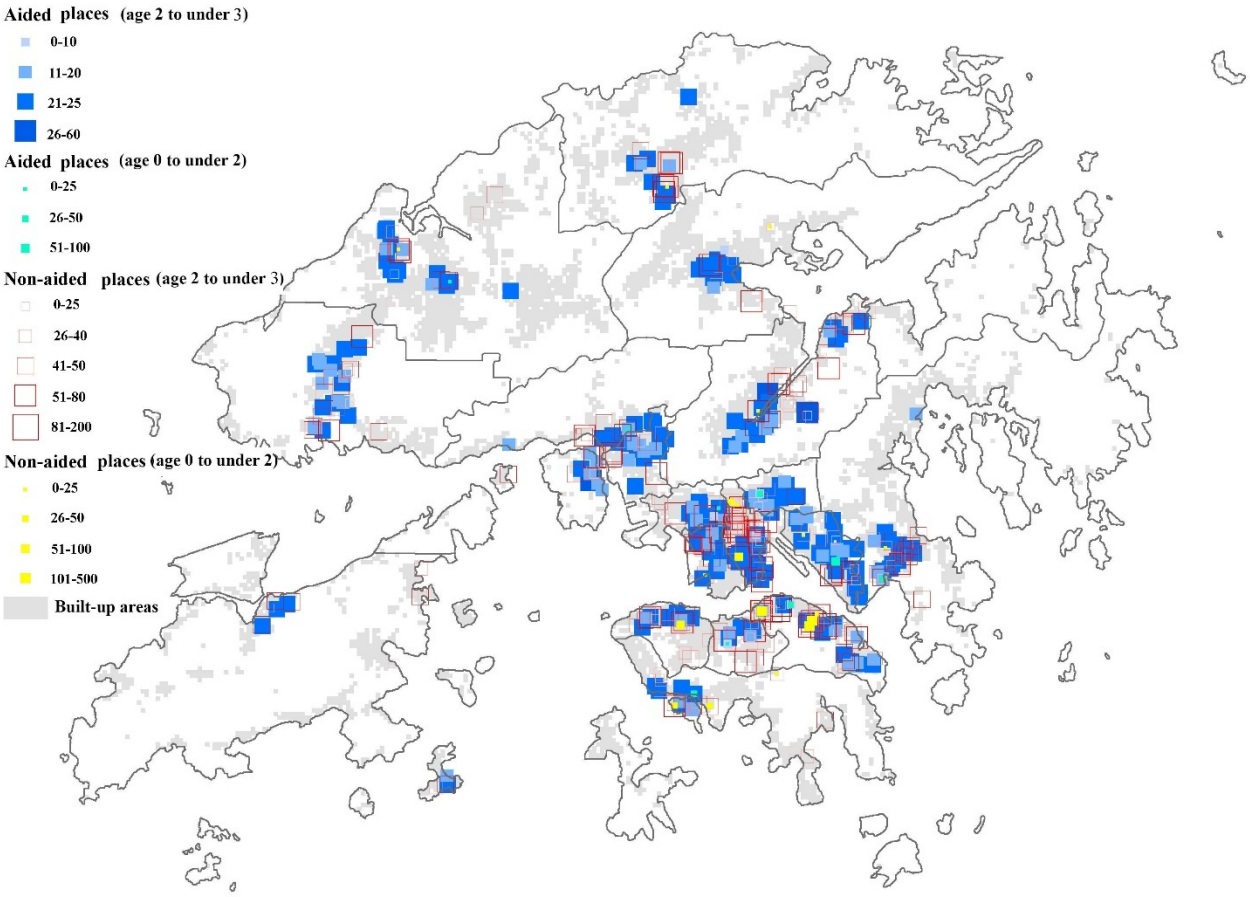


Figure 4. 3 Spatial distributions of aided and non-aided CCCs attached to KGs, and their places in Hong Kong

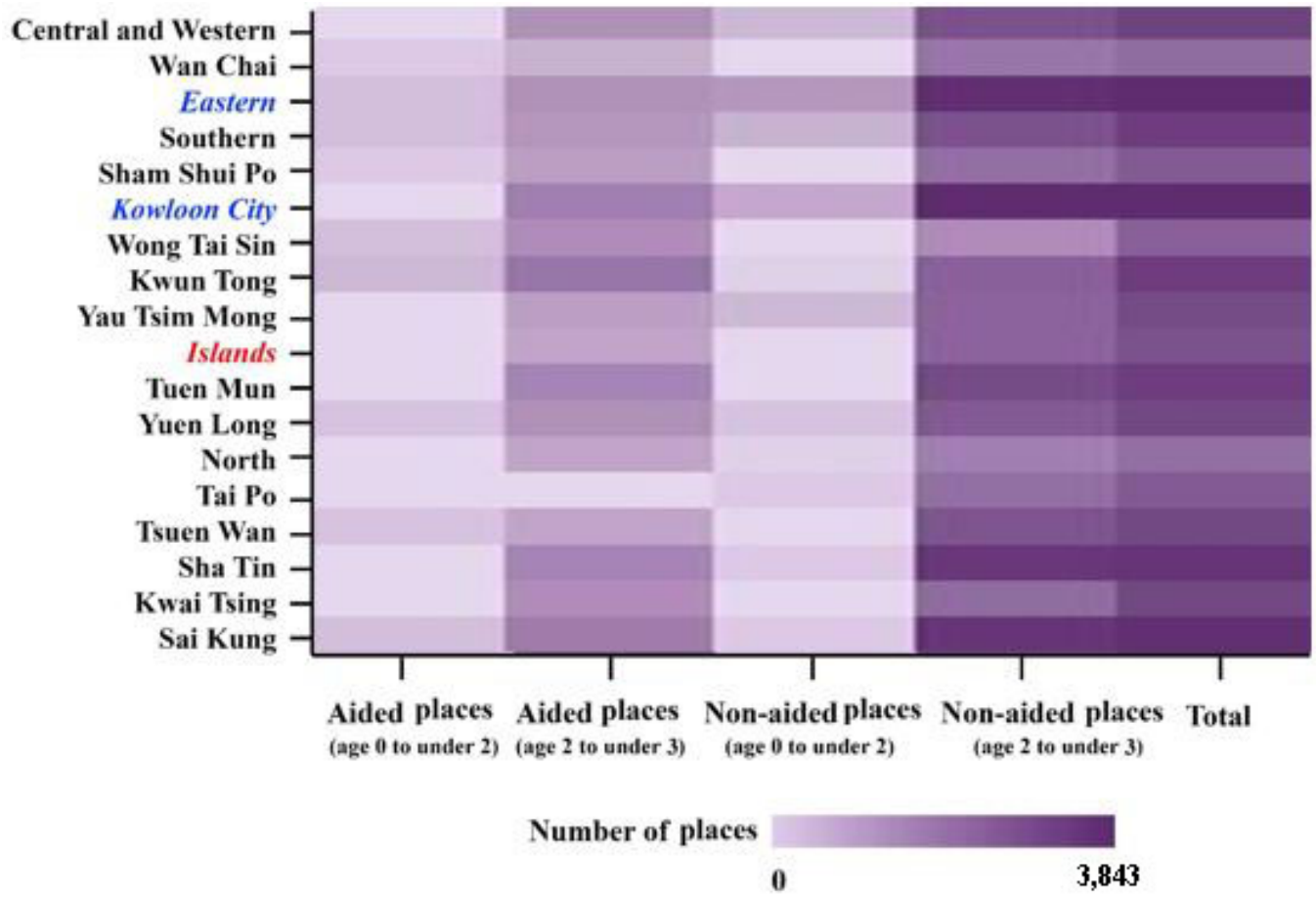


Figure 4. 4 Heat map of the places of aided and non-aided CCCs attached to KGs

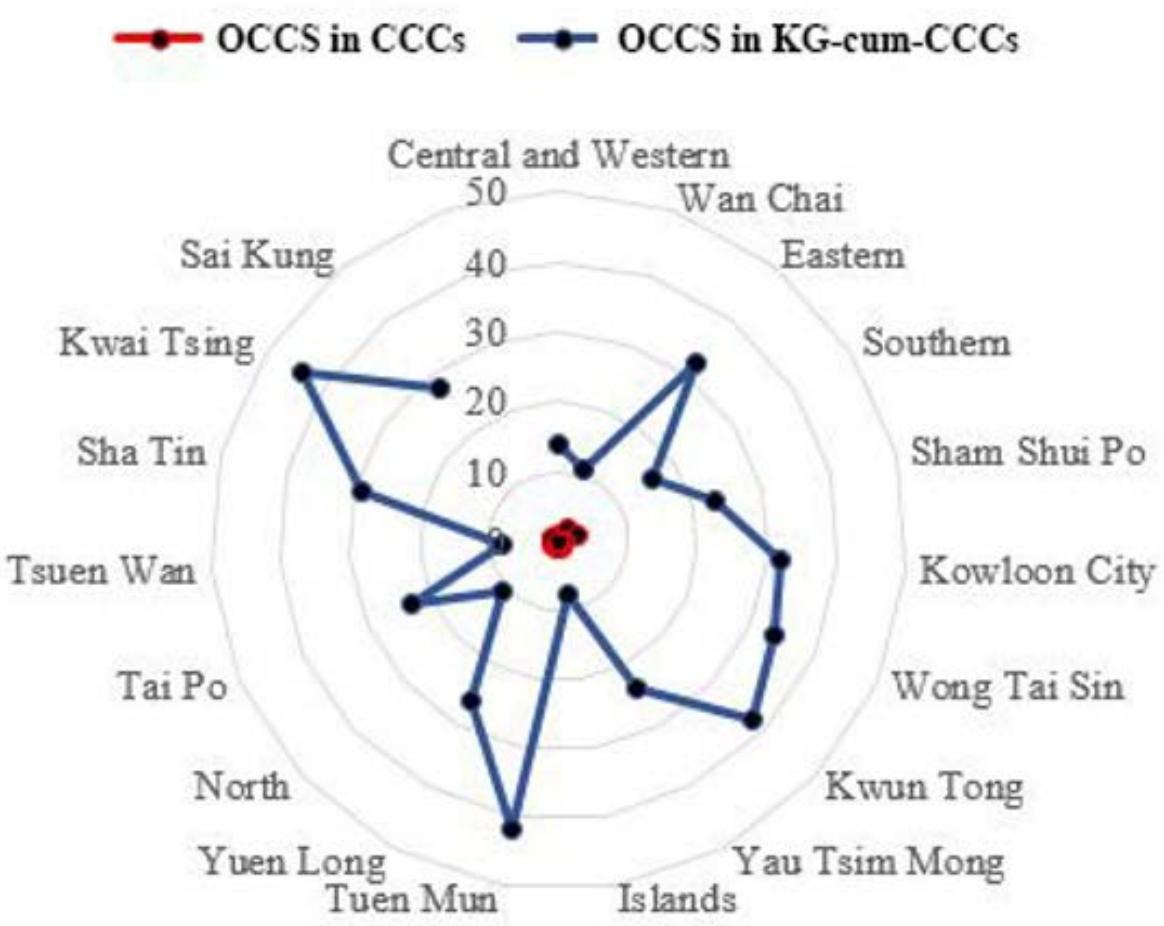


Figure 4. 5 Number of OCCS places in standalone CCCs and KG-cum-CCCs

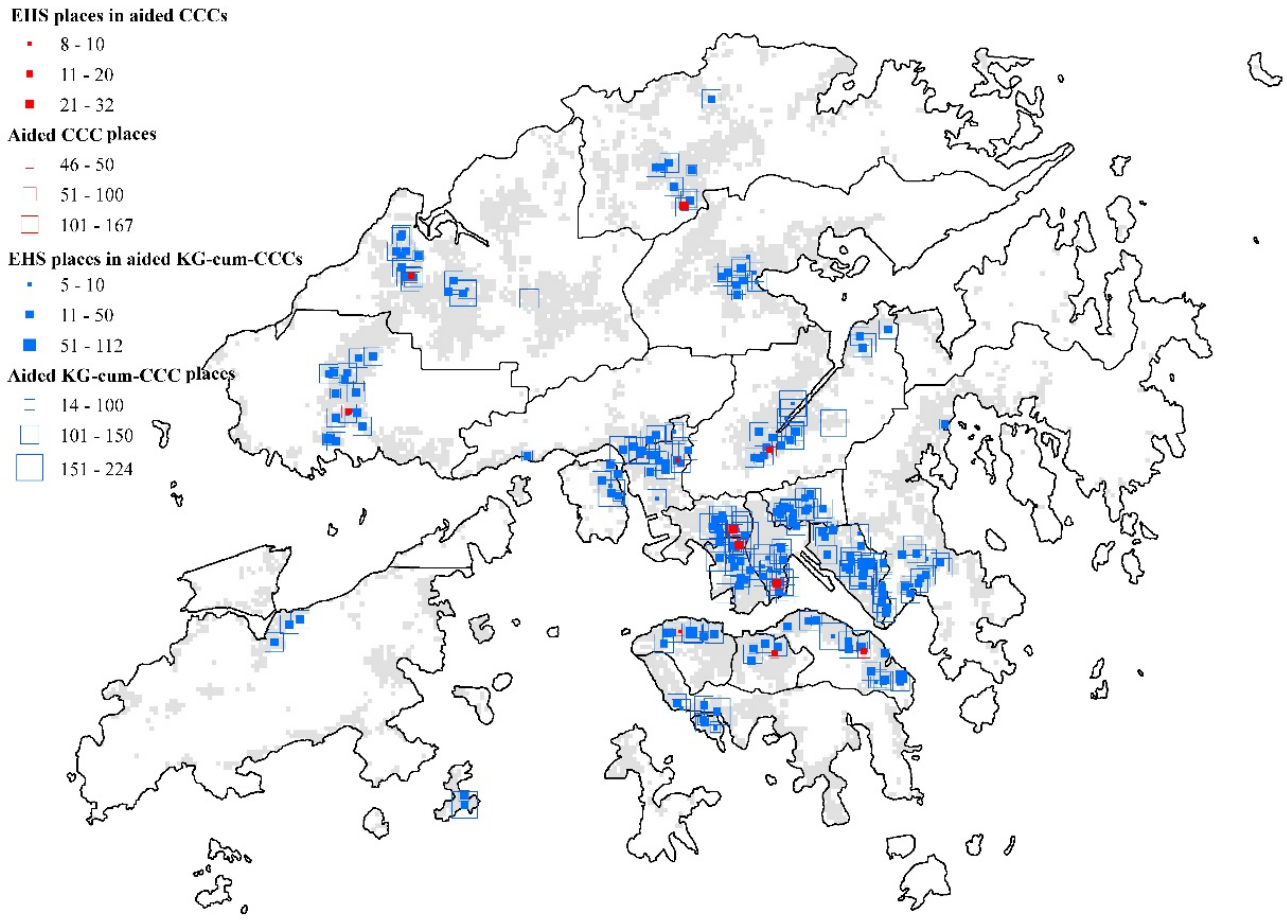


Figure 4. 6 Spatial distributions of EHS places in aided standalone CCCs and aided KG-cum-CCCs in Hong Kong

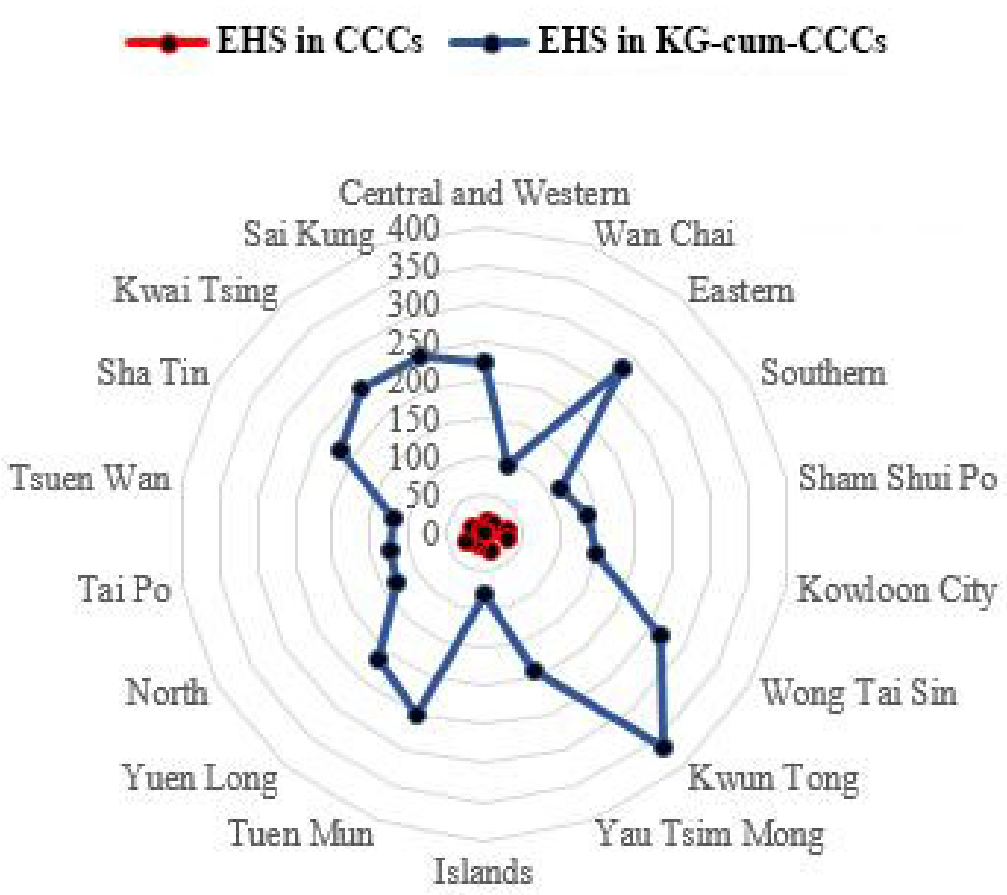


Figure 4. 7 Number of EHS places in standalone CCCs and KG-cum-CCCs

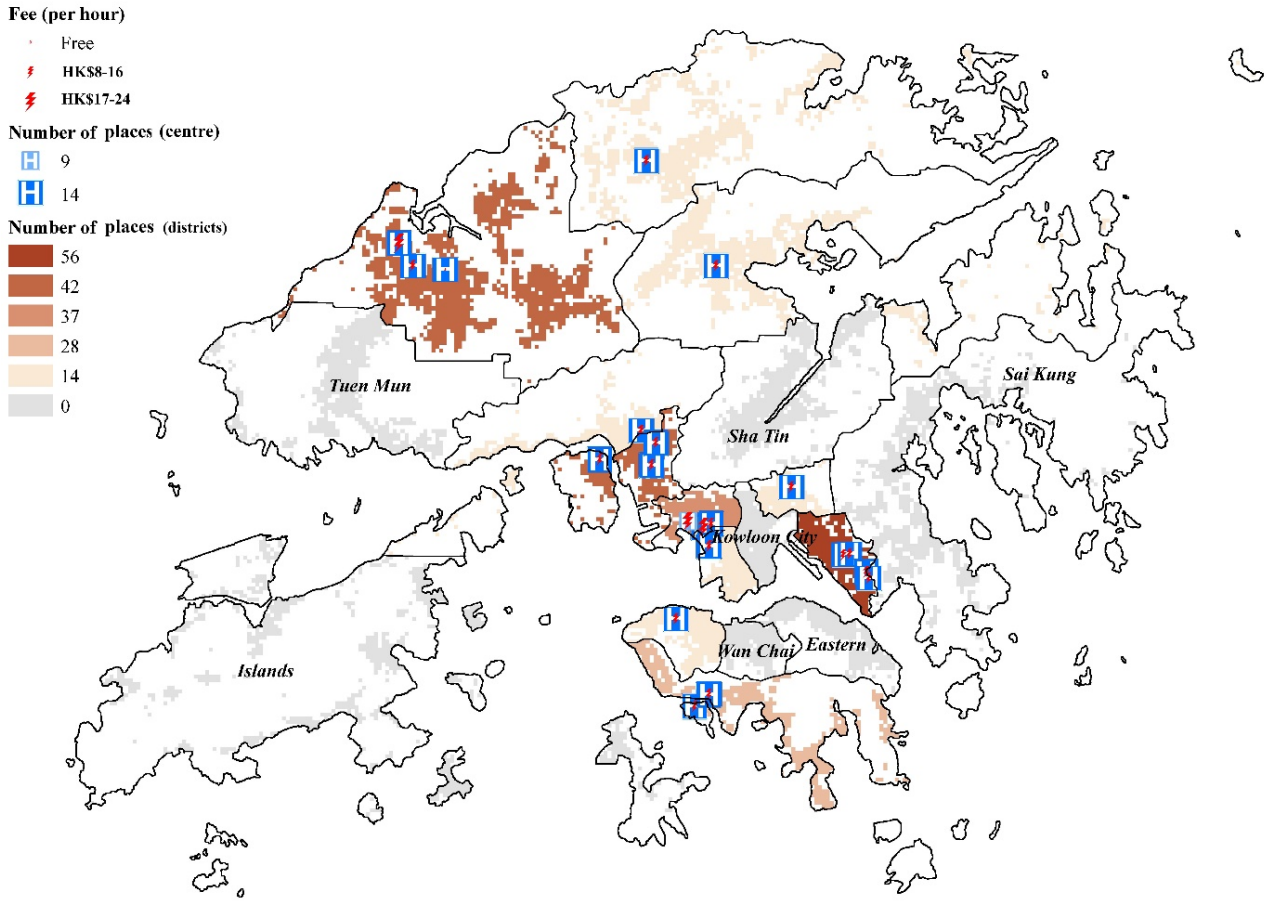


Figure 4. 8 Spatial distributions of MHCCCs and fee per hour in Hong Kong

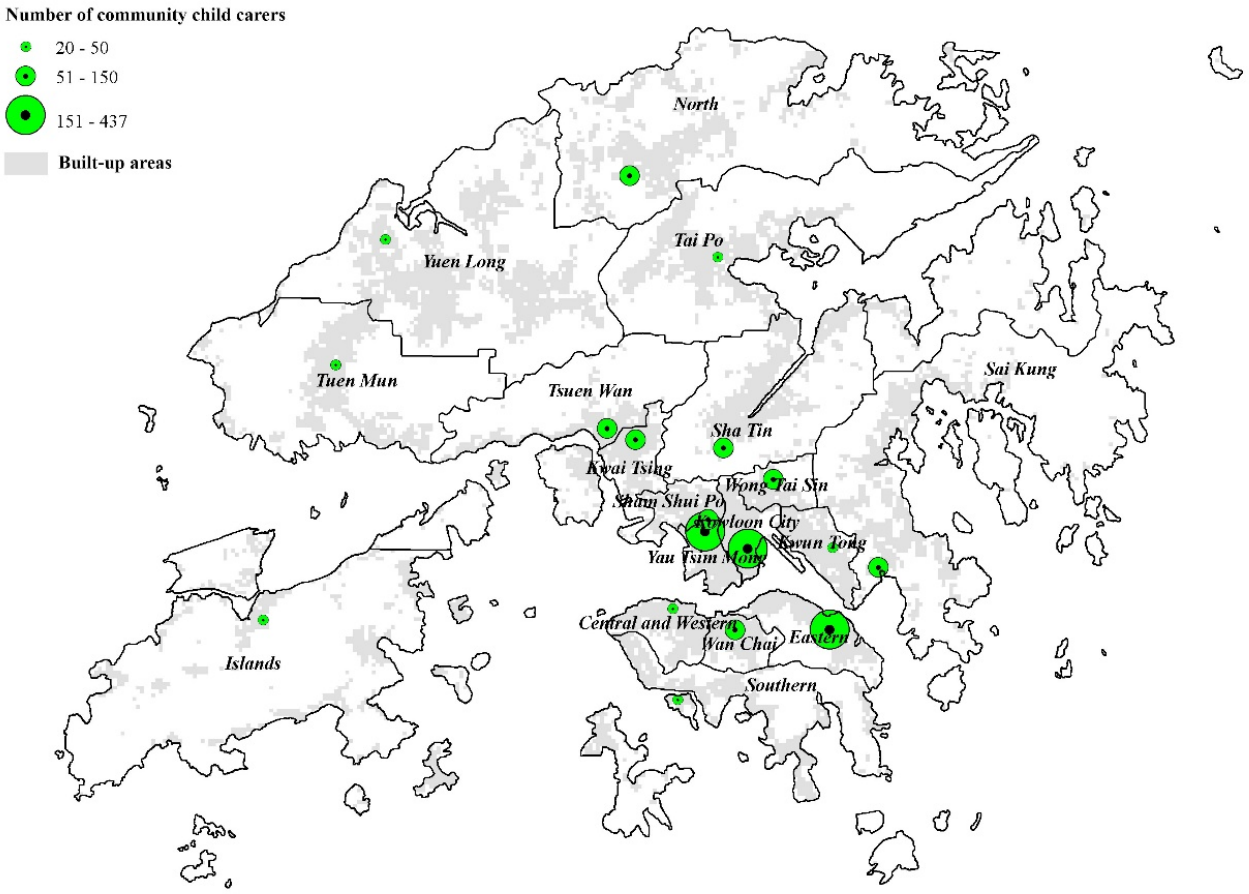


Figure 4. 9 Spatial distributions of NSCCP and number of home-based child carers in Hong Kong.

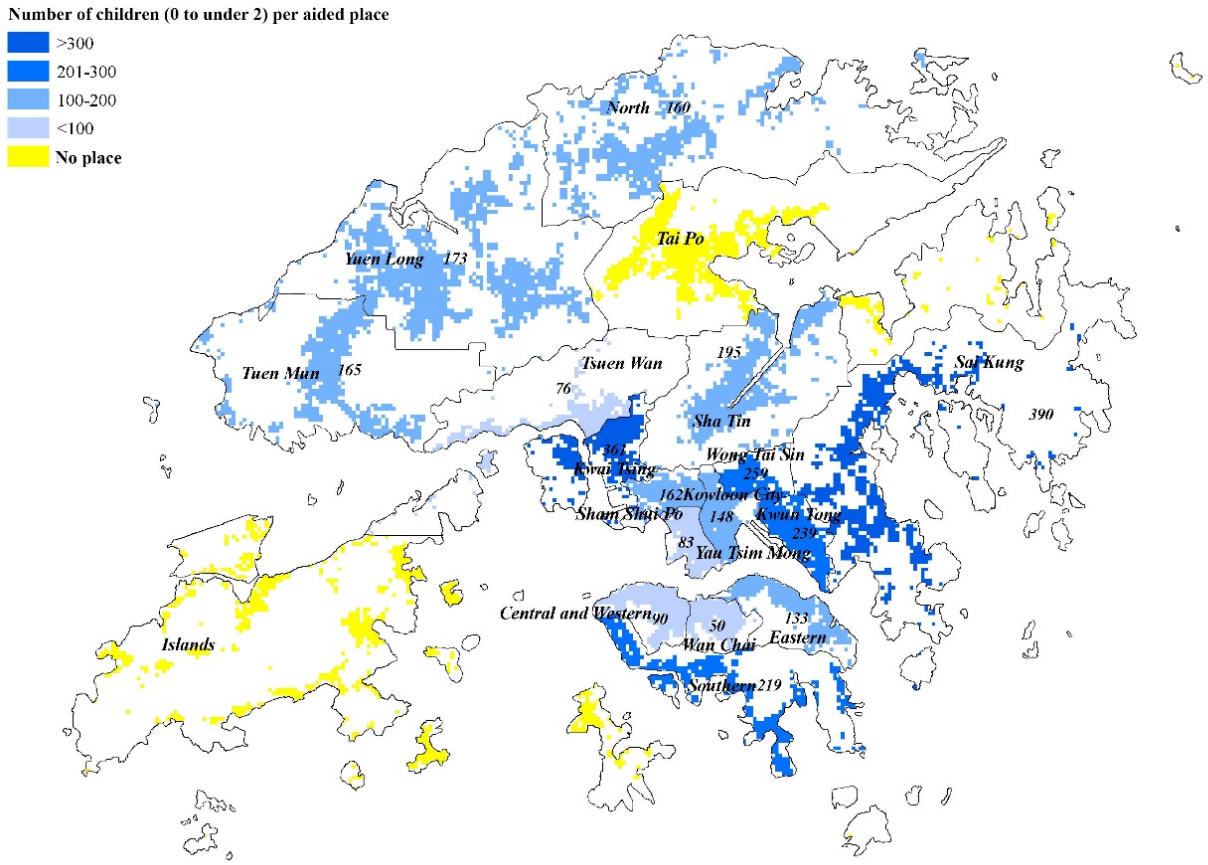


Figure 4. 10 Availability of aided standalone CCCs and CCCs attached to KGs (for children aged 0 to under 2) across 18 districts

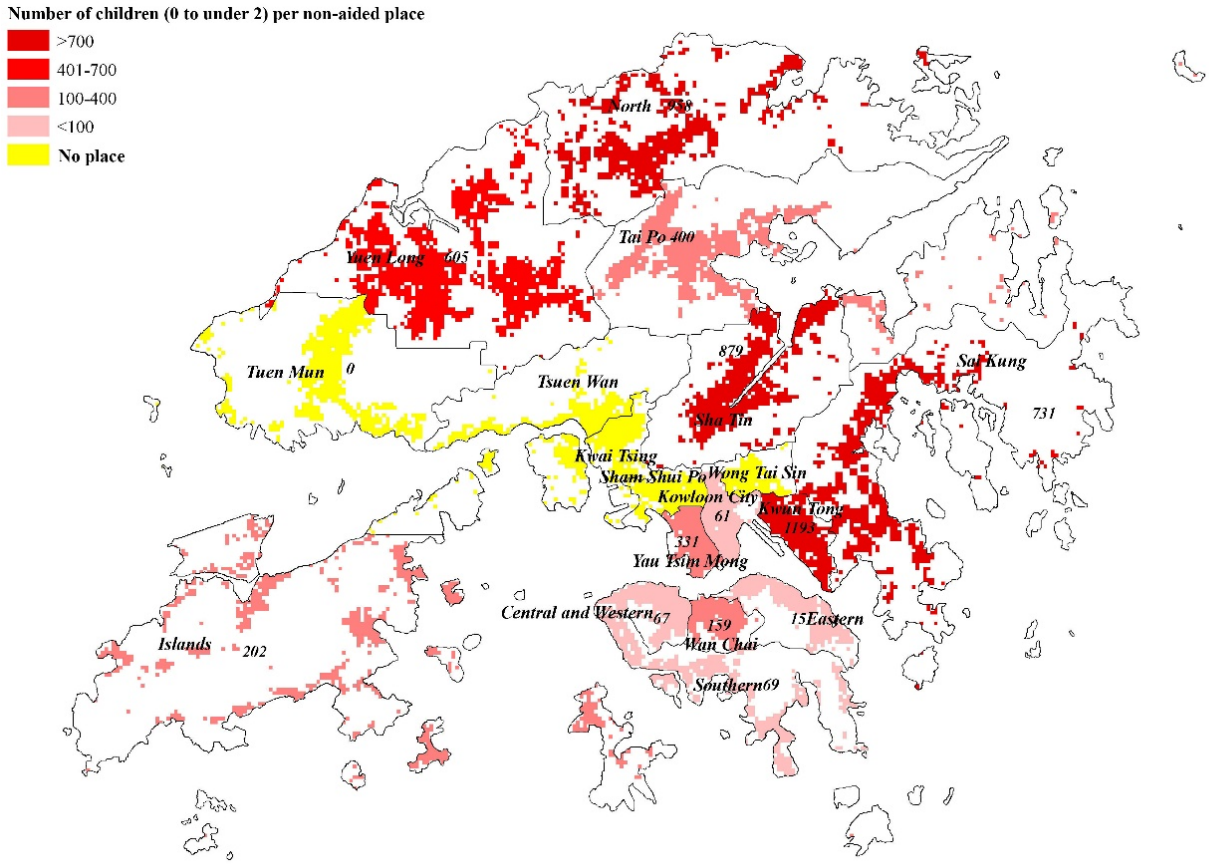


Figure 4. 11 Availability of non-aided standalone CCCs and CCCs attached to KGs (for children aged under 2) across 18 districts

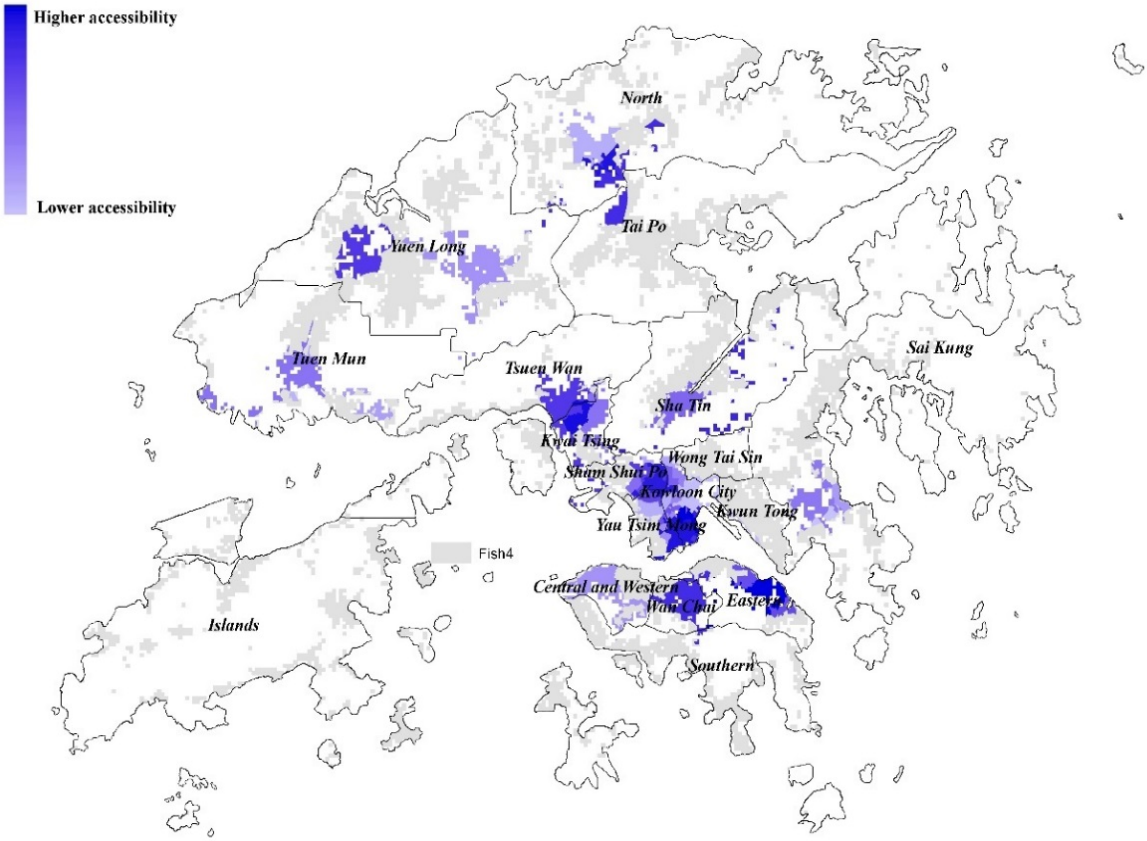


Figure 4. 12 Accessibility of aided standalone CCCs and CCCs attached to KGs (for children aged 0 to under 2) at Large Street Block geographical units

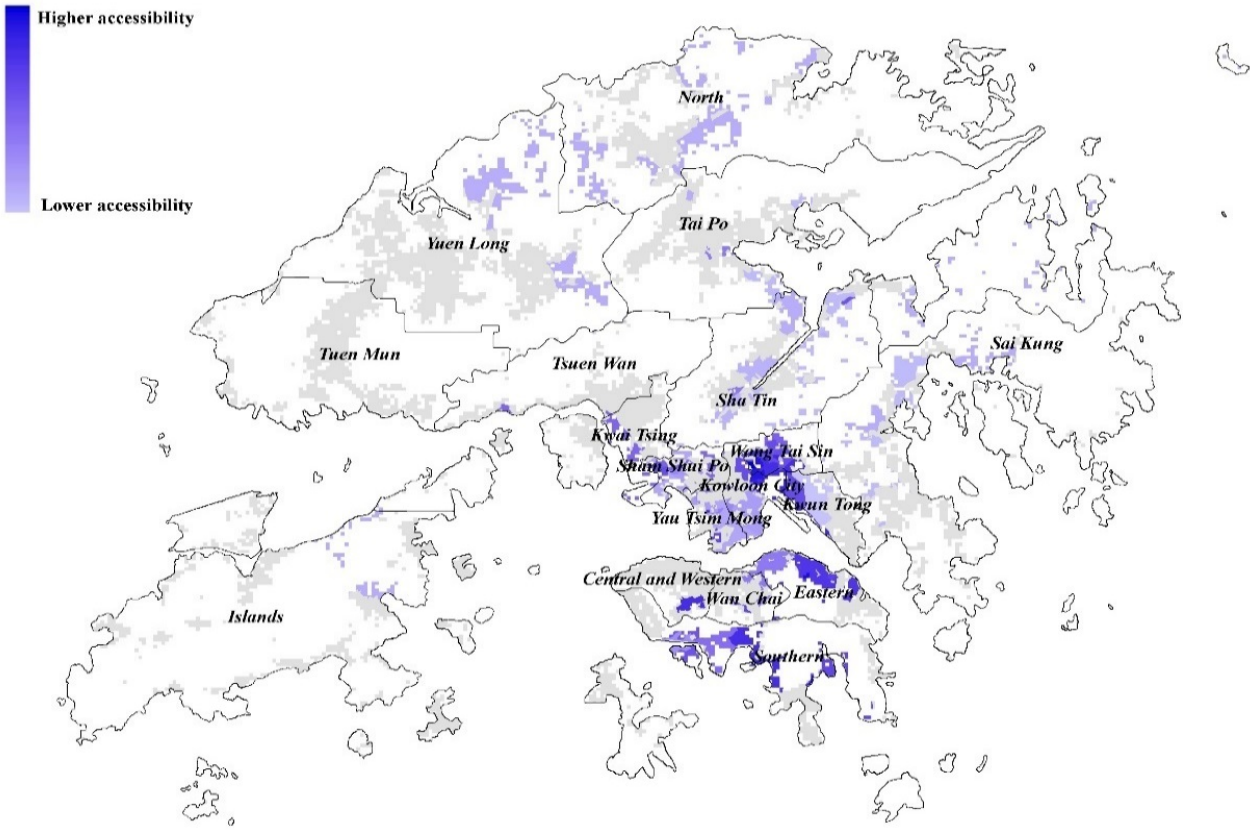


Figure 4. 13 Accessibility of non-aided standalone CCCs and CCCs attached to KGs (for children aged 0 to under 2) at Large Street Block geographical units

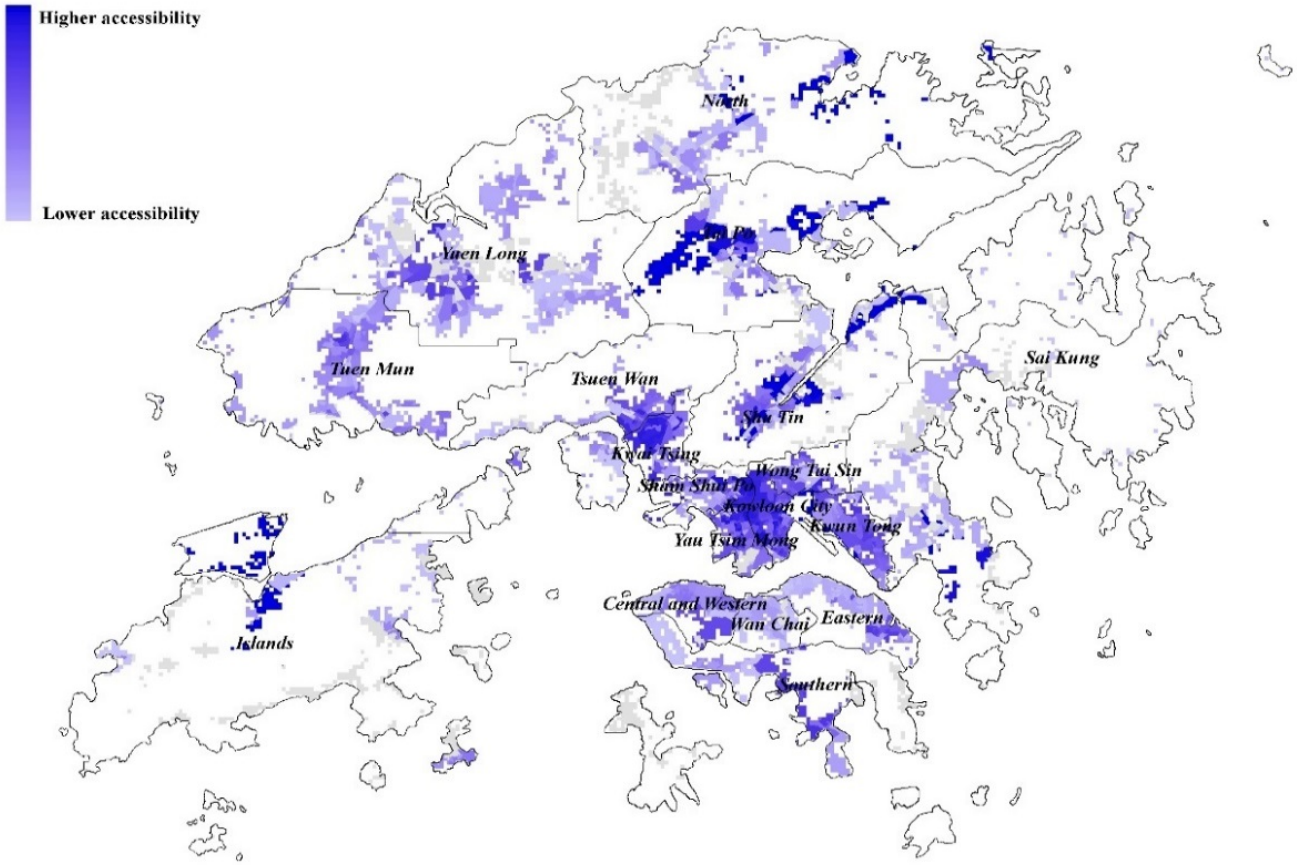


Figure 4. 14 Accessibility of aided standalone CCCs and CCCs attached to KGs (for children aged 2 to under 3) at Large Street Block geographical units

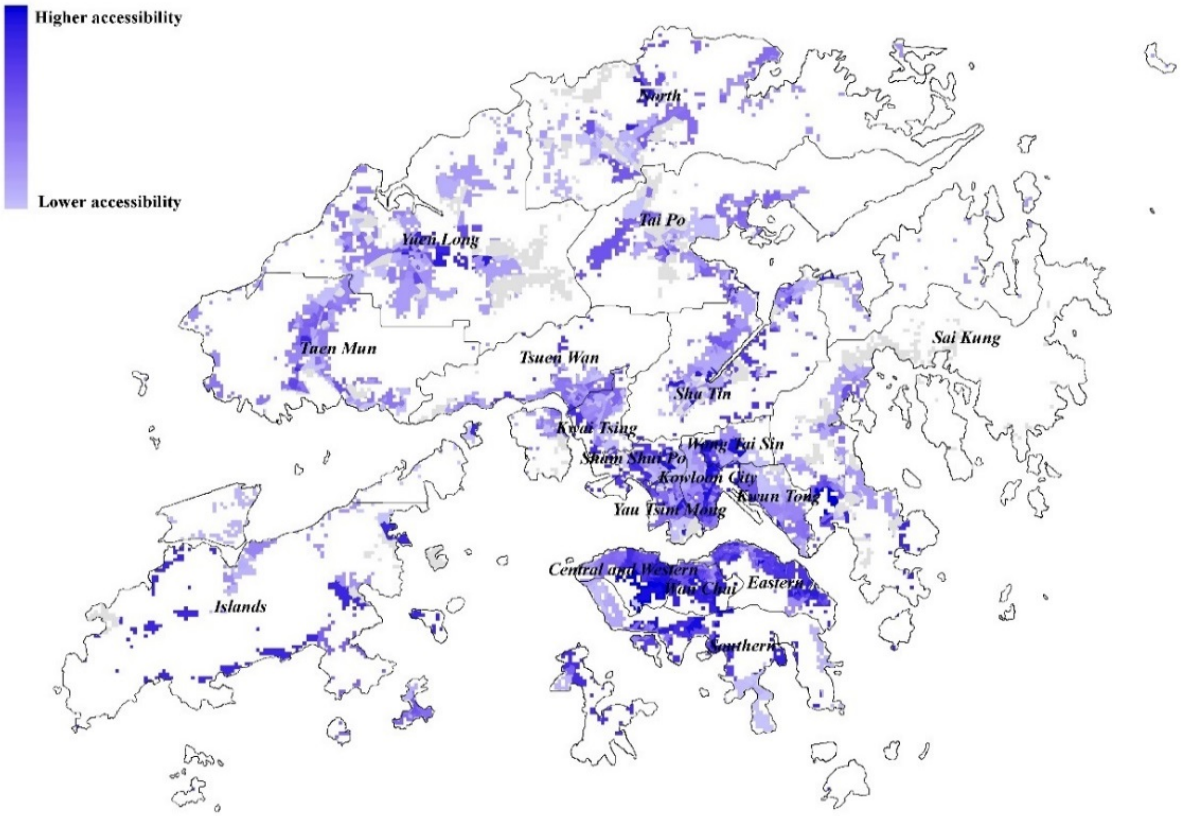


Figure 4. 15 Accessibility of non-aided standalone CCCs and CCCs attached to KGs (for children aged 2 to under 3) at Large Street Block geographical units

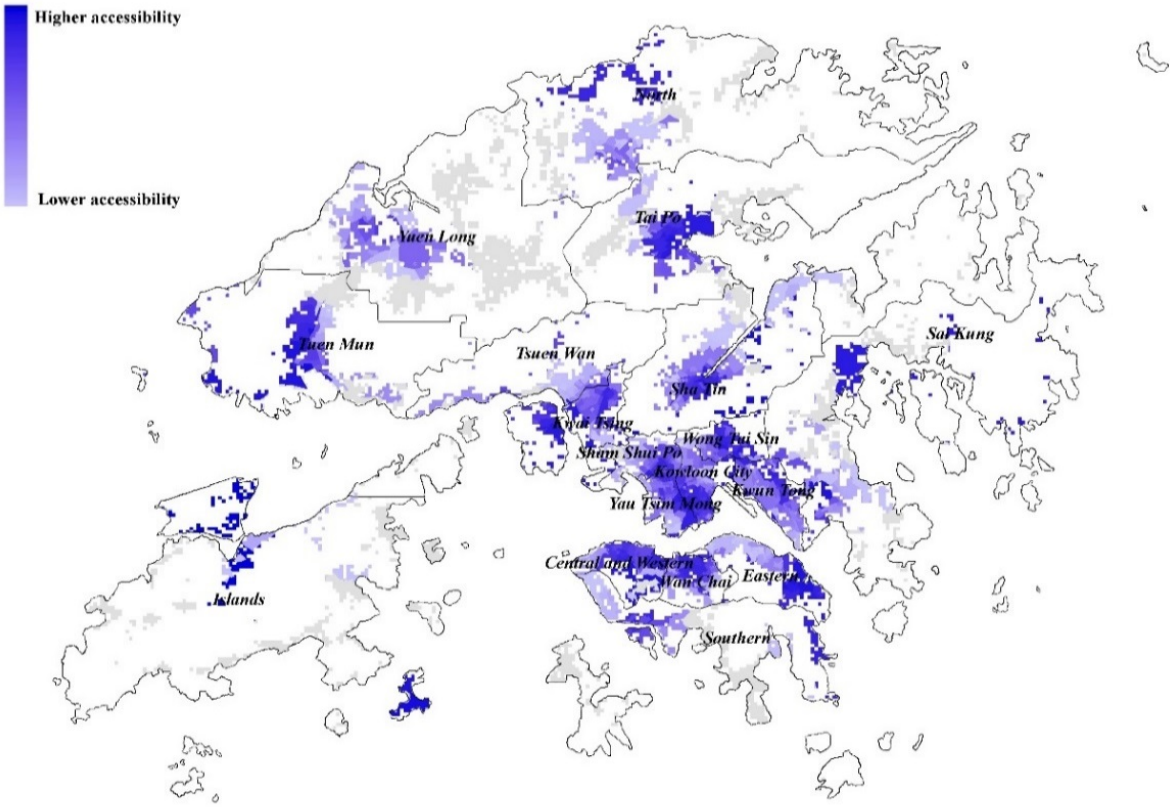


Figure 4. 16 Accessibility of OCCS places (for children aged under 6) at Large Street Block geographical units

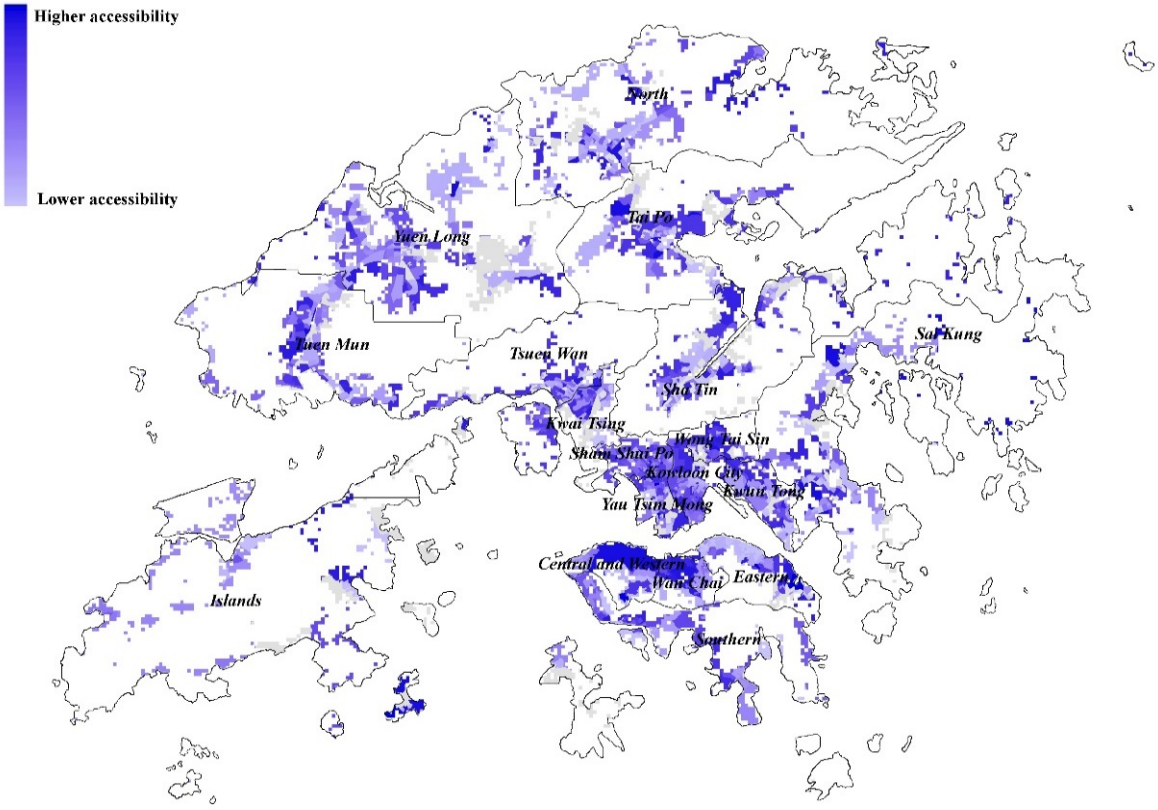


Figure 4. 17 Accessibility of EHS places (for children aged under 6) at Large Street Block geographical units

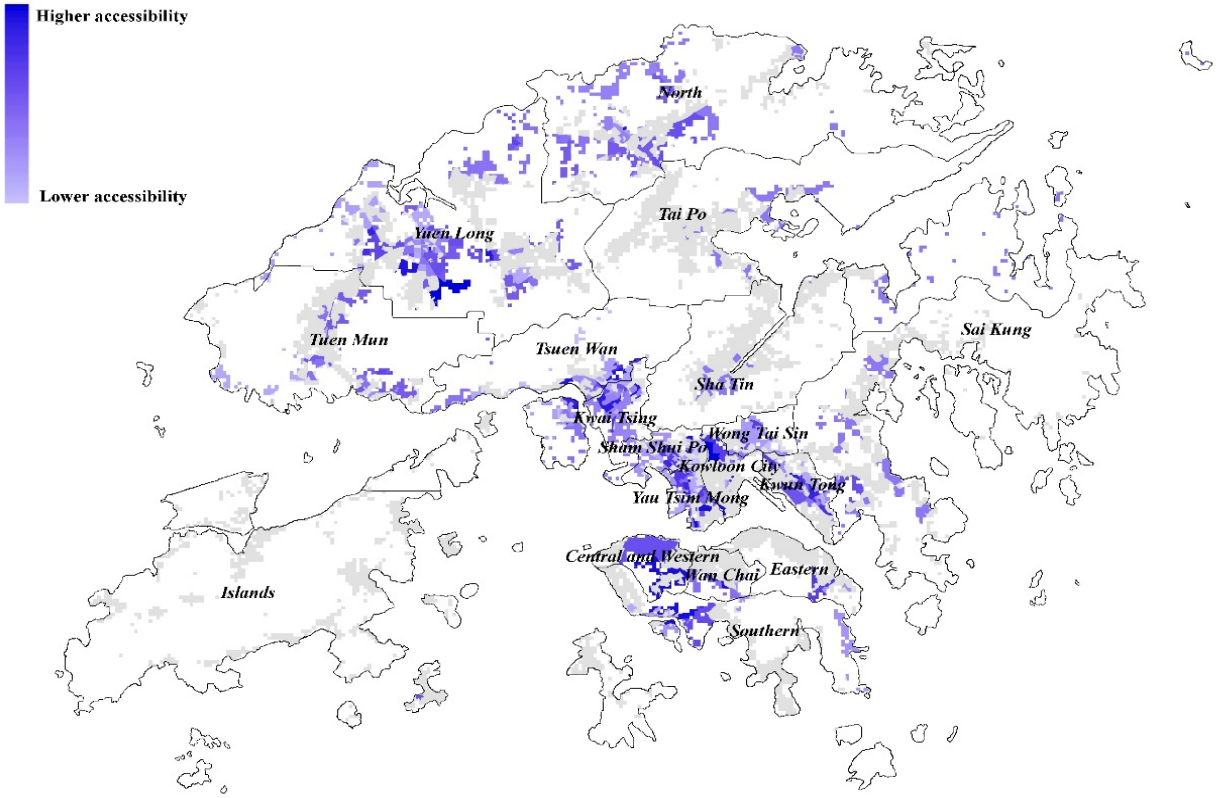


Figure 4. 18 Accessibility of MHCCC places (for children aged under 6) at Large Street Block geographical units

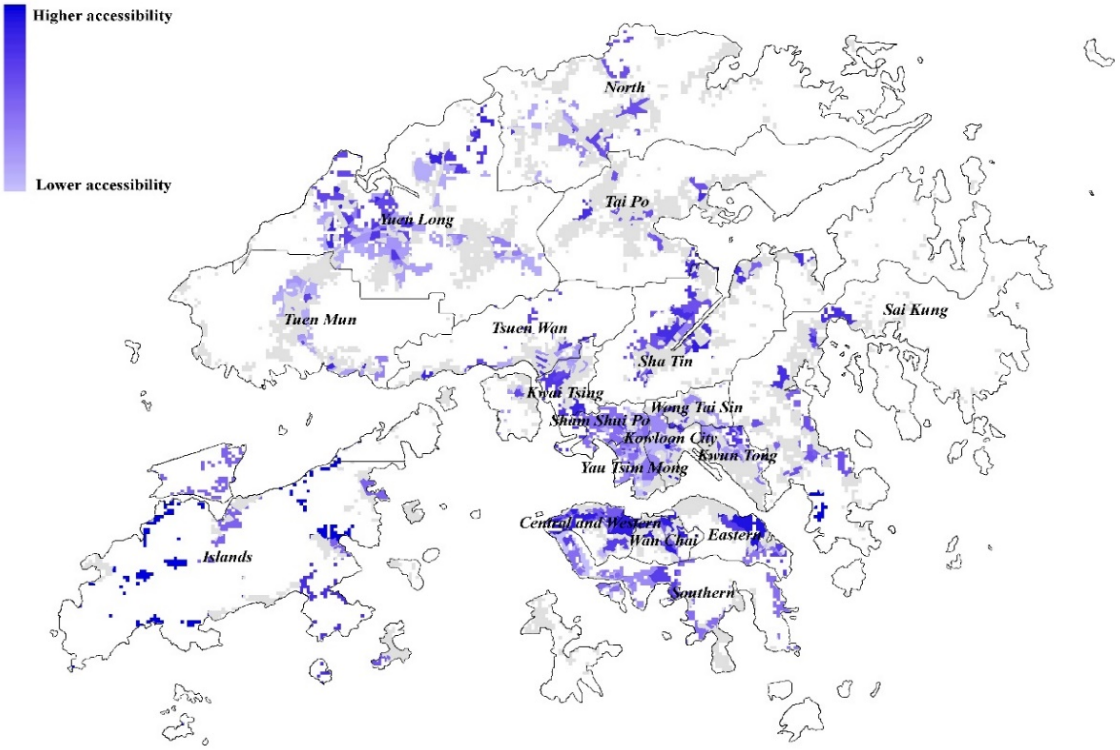


Figure 4. 19 Accessibility of NSCCP places (for children aged under 9) at Large Street Block geographical units

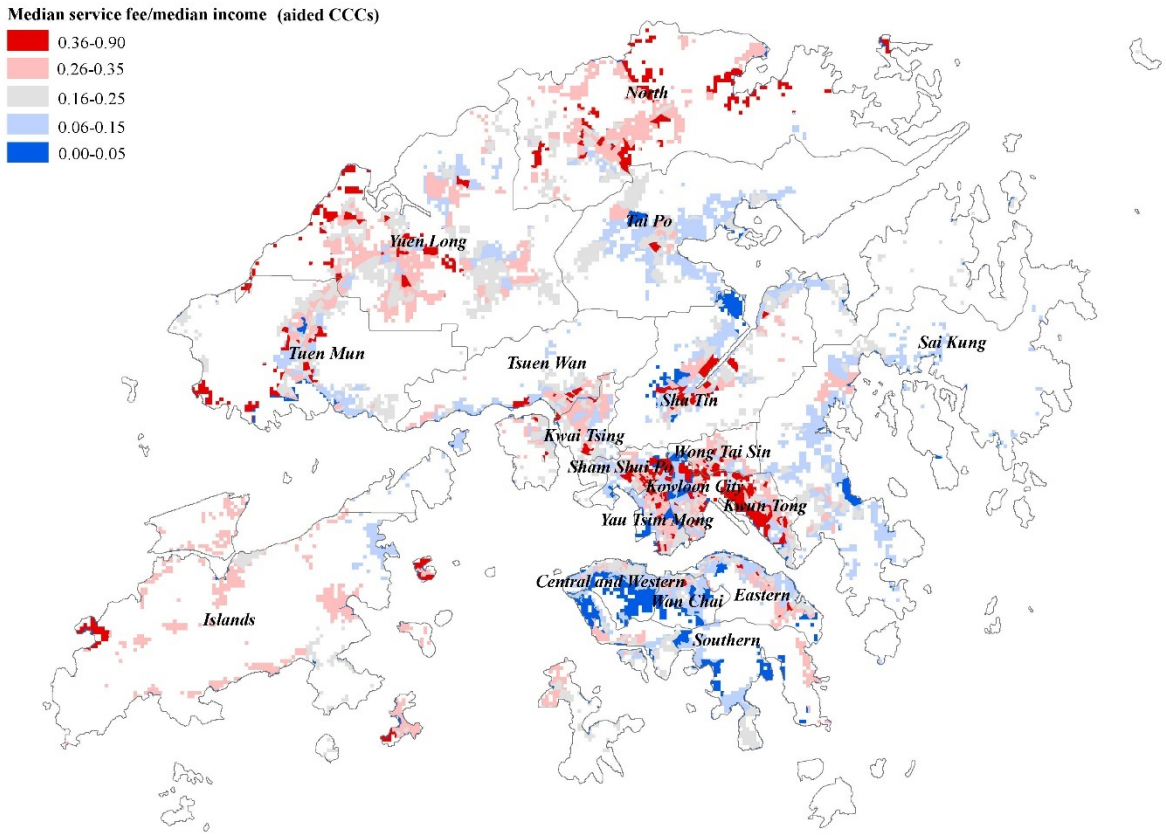


Figure 4.20 Affordability of aided standalone CCCs at Large Street Block geographical units

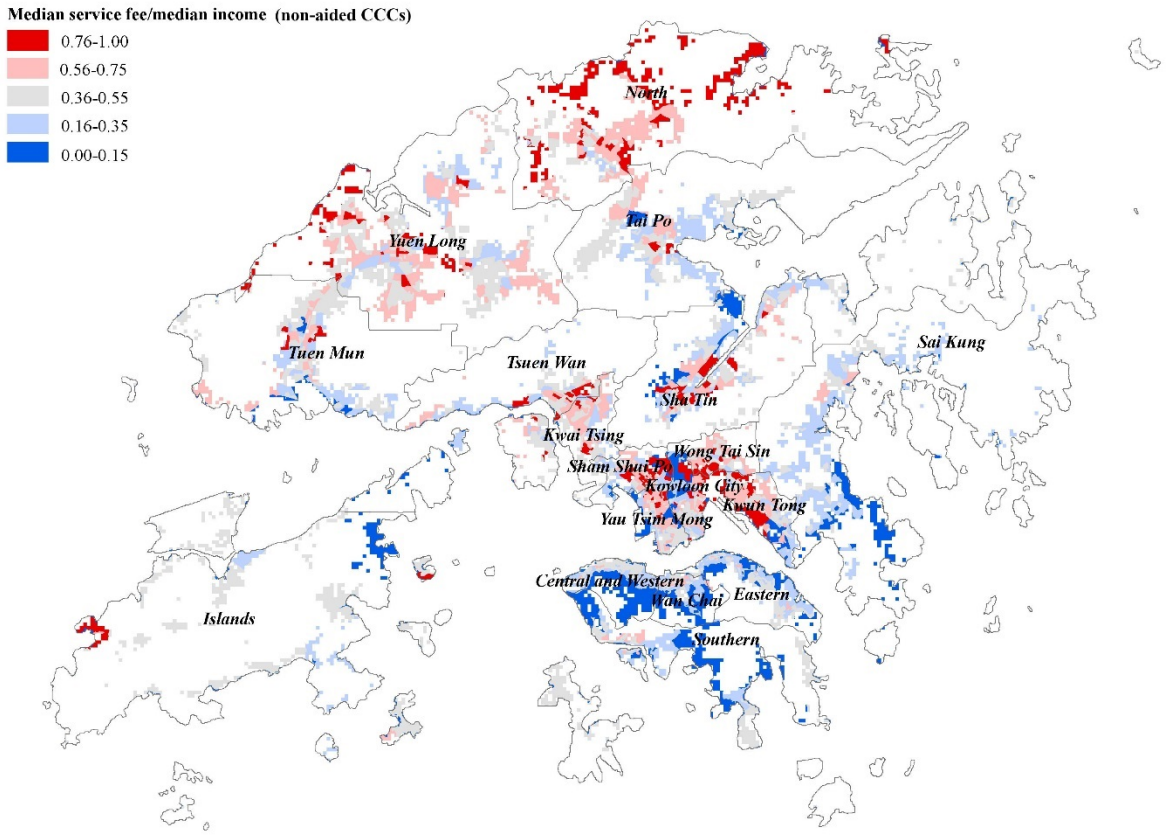


Figure 4. 21 Affordability of non-aided standalone CCCs at Large Street Block geographical units

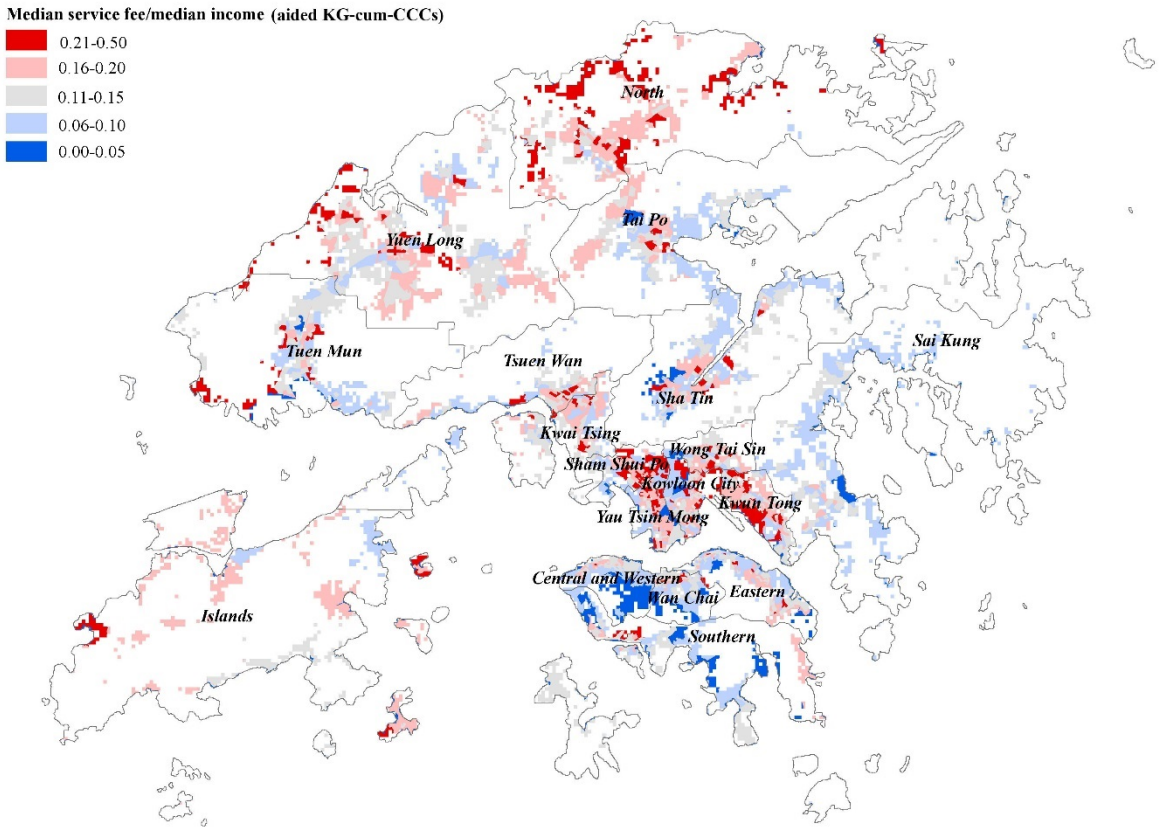


Figure 4. 22 Affordability of aided CCC attached to KGs at Large Street Block geographical units

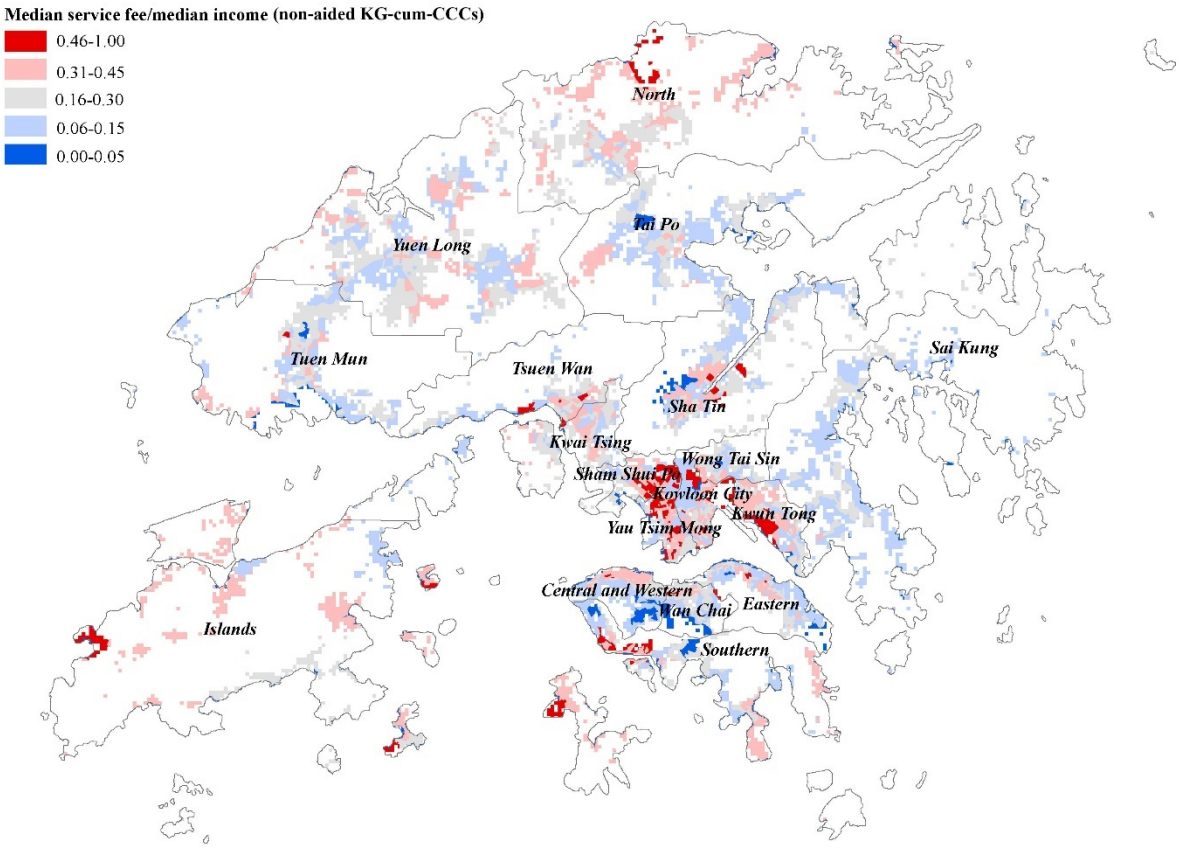


Figure 4. 23 Affordability of non-aided CCC attached to KGs at Large Street Block geographical units

Appendix 5 Estimation procedures of the key metrics: availability, accessibility and affordability

(1) Availability

The availability of all 6 types of day child care services (CCCs, KG-cum-CCCs, OCCS, EHS, MHCCCs, NSCCP) is calculated as follows:

$$\text{Availability}_{ij} = \left(\frac{S_{ij}}{D_{ij}}\right)$$

Where:

- *i*: type of service
- *j*: Hong Kong distict council districts
- S: Supply of services
- D: Demand of services

(2) Accessibility

Two-step Floating Catchment Area method ("2SFCA")[62] will be used to calculate the Service Accessibility Index.

Detailed steps of Calculating the Service Accessibility Index:

Step 1: Get the centroid of each construction land

Step 2: Calculate the population of each plot of construction land:

$$\text{Population of each plot of construction land} = \frac{area\ of\ construction\ land}{total\ area\ of\ all\ construction\ land\ in\ the\ same\ district} * total\ population\ of\ the\ district$$

Step 3: Calculate the service capacity of each service in catchment of 1km
(with the assumption that the residents' daily activities mainly take place in the buffer of 1km):

$$\text{Service capacity} = \frac{1}{\sum_{construction\ land \in \{distance\ to\ service\ \leq\ 1km\}} Population\ of\ construction\ land} * 1000$$

Step 4: Calculate the accessibility of each construction land:

$$\text{Construction land accessiblity} = \sum_{service \in \{distance\ to\ construction\ land\ \leq 1km\}} service\ capacity$$

Step 5: Calculate the accessibility of each district:

$$\text{accessibility} = \frac{\sum constuction\ land\ accessibility}{number\ of\ construction\ land}$$

The higher value of Service Accessibility Index indicates the better or easier access to services.

[62] Luo, W., & Qi, Y. (2009). An enhanced two-step floating catchment area (E2SFCA) method for measuring spatial accessibility to primary care physicians. Health & Place, 15(4), 1100-1107.

(3) Affordability

The affordability of all 6 types of day child care services (CCCs, KG-cum-CCCs, OCCS, EHS, MHCCCs, NSCCP) is calculated as follows:

$$\text{Affordability}_{ij}{}^{63} = \left(\frac{C_{ij}}{H_{ij}}\right)$$

Where:

- *i*: type of service
- *j*: Hong Kong distict council districts
- C: median/average monthly cost of service
- H: median/average monthly household income[64]

The cost of service needed per month[65]

C = unit cost per hour * number of hours used per month

Data used for the estimations

(1) Availability

- Data of the services (by types) from the Social Welfare Department
- Data from the questionnaire designed by the consultant team
- Latest Population Census from the Census and Statistics Department

(2) Accessibility

- Geo-community database from the Lands Department
- Latest Population Census from the Census and Statistics Department

(3) Affordability

- Latest General Household Survey from the Census and Statistics Department
- Data of the services (by types) from the Social Welfare Department

[63] Affordablity is expressed in percentage (%). The higher the %, the lower the affordability of child care services relative to household income; and the lower the %, the higher the affordability of child care services relative to household income.

[64] Data are extracted from the latest General Household Survey data (i.e. 2016 or the latest available data) from the C&SD

[65] Data are extracted from the data provided by the Social Welfare Department and Part II stocktaking

Appendix 6 Questionnaire design, sampling and promotion methods

A. Questionnaire design

There are two types of questionnaire used in this large scale data collection exercise, one targeting current users and the other targeting at non-current users including previous users, potential users and non-users.

i. Questionnaire for current users

This questionnaire consists of four parts including (1) information related to the usage of current services, (2) satisfaction on the current services, (3) current and acceptable spending on the services, and (4) family profile.

1. Information related to the current usage of the services

   The questionnaire asked about the basic information about the current usage of the services which was stated as below:

   - Types of services
   - Name of the centre(s) and the location(s)
   - Frequency of using the services
   - List of the service centres which had been waited for and the waiting time
   - Main reason(s) for using the services in terms of 13 items stated below:
     - Convenient location
     - Affordable price
     - Safe environment and hygiene
     - Professional service
     - More social interaction for child
     - Parents have health problem
     - Others
     - Flexible operating hours
     - Appropriate facilities
     - Child development
     - Have caregiver to take care
     - Parents have to work
     - Grandparents not able to help

2. Current and acceptable spending on the services

   This part focused on cost-related questions. The current spending on the services and the maximum acceptable cost/fee were asked, compared to the average market cost/fee with an assumption of keeping the quality of the current services centre in terms of the 11 items mentioned in Part 2 of the questionnaire remain unchanged.

   - It is conveniently located
   - It has flexible operating hours
   - It charges affordable price
   - It has age appropriate facilities and equipment
   - It has safe and hygienic environment
   - It provides age appropriate development programme
   - The caregiver is warm and affectionate toward my child

- The caregiver is supportive of me as parent
- My child has adequate social interaction with other children
- My child feels happy in the arrangement
- My child gets enough attention from the caregiver

3. Family profile

   The questionnaire asked about the family background of the child using child care services at individual level and household level. At individual level, information related to their parents and guardian (if applicable) and their grandparents was asked.

   <u>Parents and guardian (if applicable)</u>

   - Age
   - Education attainment
   - Current economic status (in the past 30 days)
   - Working district

   <u>Grandparents</u>

   - Age
   - Current living district
   - Education attainment

   At household level, the collected information is stated below:

   - Number of children, their ages and the status of using child care services
   - Living district of the child using the child care services currently
   - Housing type
   - Monthly household income
   - Comprehensive Social Security Assistance ("CSSA") recipient
   - Family composition (i.e. the child living with whom)

ii. Questionnaire for non-current users

This questionnaire consists of several parts targeted different non-current users stated as below.

1. Information related to previous usage of the services

   The questionnaire asked for some basic information stated below targeted *previous users* of the services.

   - Types of services
   - Name of the centre(s) and the location(s)
   - List of the service centres which had previously been waited for and the waiting time
   - Main reason(s) for using the services
   - Preference of alternative child care services

2. Information related to the waiting situation of the services

The questionnaire asked for some basic information of the services stated below targeted *potential users* with at least one child who was eligible to use the services.

- Type(s) of child care service(s) currently waiting for
- Name of the centre(s)
- Main reason(s) for applying for child care service(s)
- Preference of alternative child care services

3. Main reason(s) for not using child care services

   The questionnaire asked *non-users* for the main reason(s) for not using child care services (i.e. CCC or NSCCP).

   - Main reason(s) for not using child care services
   - Main reason(s) for relying on home caregivers (parents/guardian/ grandparents/ domestic helper)
   - Willingness to use child care services if expectations met
   - Preferred type of child care service, and age of children when enrolling

4. Preference of using/not using the child care services

   The questionnaire asked potential users who was pregnant/pregnancy was under planning for the main reason(s) that preferred using/not using child care services.

   - Preference to prefer using child care services
   - Type(s) of service(s) preferred to be used and the preferred age of the children to enroll them in the service
   - Main reason(s) to prefer using/not using child care services
   - Main reason(s) to prefer relying on home caregivers (parents/guardian/ grandparents/domestic helper)

5. Acceptable spending on the services

   This part focused on cost-related questions. The questionnaire asked the *previous users* and *potential users* about the maximum acceptable price compared to the average market price with an assumption of keeping the quality of the services in terms of the 11 mentioned items unchanged.

6. Family profile

   The questionnaire asked for information about the background of the respondents and their spouse (if applicable) at individual and family profile at household level for all *non-current* users. At individual level, the below information was collected:

   <u>Respondents</u>

   - Sex and age
   - Educational attainment
   - Current economic status (in the past 30 days)
   - Working district
   - Marital status

- Relationship with the child

Spouse (if applicable)

- Age
- Educational attainment
- Current economic status (in the past 30 days)
- Working district

At household level, the information stated below was collected:

- Living district
- Housing type
- Monthly household income
- Comprehensive Social Security Assistance ("CSSA") recipient
- Number of children, their ages and the status of using child care services (if there is at least one child in their household)
- Family composition (i.e. the child living with whom) (if there is at least one child in their household)

B. Sampling and promotion methods

Different means were adopted to introduce this study to the community and invite them to participate in this large scale data collection exercise. First, promotion leaflets were sent directly to the centres of the six types of services (including both aided and non-aided centres) and all Maternal and Child Health Centres ("MCHC") in 18 districts in late November 2017. To facilitate the responses, follow-up measures were made accordingly. Frequent reminders through emails and phone calls were made to the services centres to ensure the awareness. In addition, service providers such as executive directors, principals and supervisors were invited to help to promote this study to the targets actively. Meanwhile, the Department of Health was worked closely with the consultant team to set up publicity about this study. Moreover, another wave of distribution of the promotional leaflets were delivered to the centres in late January and early February 2018. Email reminders were also sent in mid-February as well as in early March to maintain the awareness of the study. To further advertise the e-questionnaires, the consultant team set up a special webpage: https://www.wellbeing.hku.hk/childcare/; a special email address: childcare@csrp.hku.hk; as well as a dedicated telephone hotline: 5617 4175 to answer any questions related to the questionnaires.

Initially, only the online data collection exercise was conducted and launched on 30 November 2017 for this study. After communicating with service providers, it was found that there were users who wanted to participate in this data collection exercise but that they did not have computers or they were illiterate in using computers. A total of 92 service centres were contacted (including 38 centres with the support of SWD) to deliver printed questionnaires. A total of 2 537 printed questionnaires were delivered to the centres in February and March 2018.

Overall, the data were collected through both electronic and printed questionnaires starting from November 2017 to May 2018 (with 5 months extension from the original planned data collection period). A total of 2 104 questionnaires (i.e. 1 387 electronic questionnaires and 717 printed questionnaires) were collected.

Appendix 7 Identification of the reasons that affect the demand for child care services

Identifying the main reasons for using or not using child care services was one of the focal points of this data collection exercise. The reasons included service-related factors (e.g. quality of services, location, operating hours, service fee and etc.), and non-service-related factors (e.g. "Parents have to work" and "Grandparents are not able to help"). Among the 1 254 valid responses received from households categorising as *current-users*, 158 were found to have missing information on this section (and thus were excluded for analysis). Therefore, for analysis below, the sample was from 1 096 valid responses from households indicating they were currently using child care services (i.e. current users) and 392 households indicating they were not using and waiting for any child care services (i.e. non-users).

A. Households using child care services (i.e. current users)

Among the 1 096 households, nearly a quarter of them (i.e. n=263) used more than one types of child care services. Collectively, these households were using a total of 1 384 child care services. For instance, 241 households indicated that they were using two different services (e.g. CCC and EHS or KG-cum-CCCs and OCCS). A breakdown of households using child care services stratified by (1) number of different services used and (2) the service types can be found in Table 7.1 and Table 7.2 respectively.

Table 7. 1 Breakdown of households using child care services stratified by number of different services used

No. of different service(s) used	No. of households	No. of services used
1	833	833
2	241	482
3	19	57
4	3	12
Total	1 096	1 384

Table 7. 2 Breakdown of households using child care services stratified by service types

Service types	No. of households
CCC	361 (aided: 351 & non-aided: 10)
KG-cum-CCC	587 (aided: 527 & non-aided: 60)
EHS	254
OCCS	56
MHCCC	29
NSCCP	97
Total number of users	1 384

Regarding Standalone CCCs, Figure 7.1 displays the percentage of different reasons for using this service. The top three reasons were "Parents have to work" (i.e. 89.5%), followed by "Have caregivers at the centres" (i.e. 76.5%) and "Convenient locations" (i.e. 70.1%).

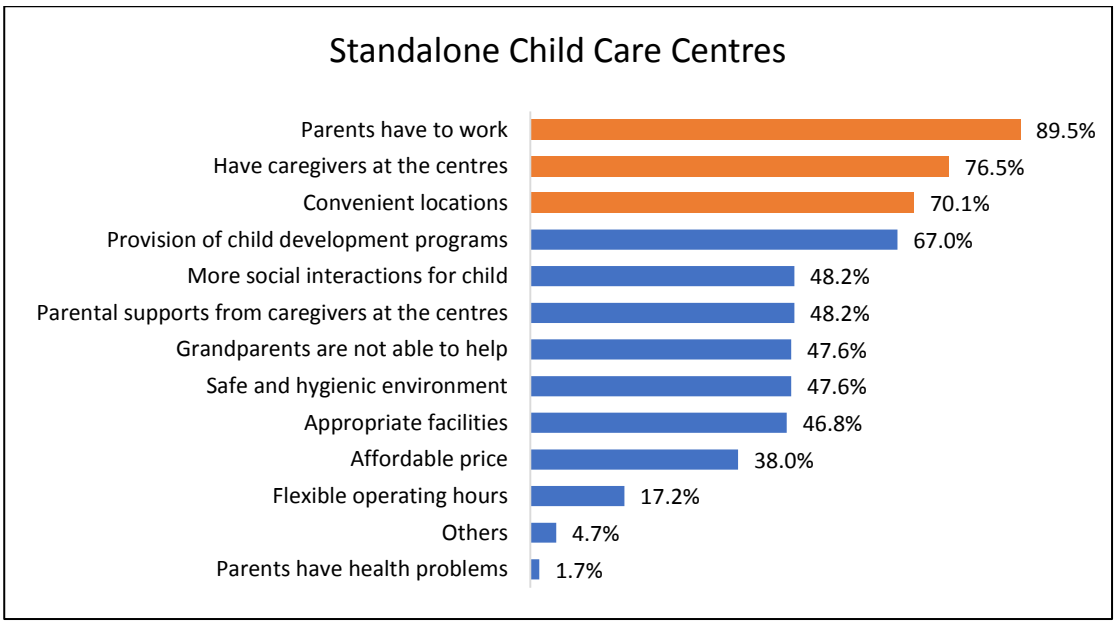


Figure 7. 1 Reasons for using Standalone Child Care Centres

Regarding CCCs attached to KGs, Figure 7.2 displays the percentage of different reasons for using this service. The top three reasons were "Convenient locations" (i.e. 75.8%), followed by "Parents have to work" (i.e. 62.9%) and "Provision of child development programmes" (i.e. 60.8%).

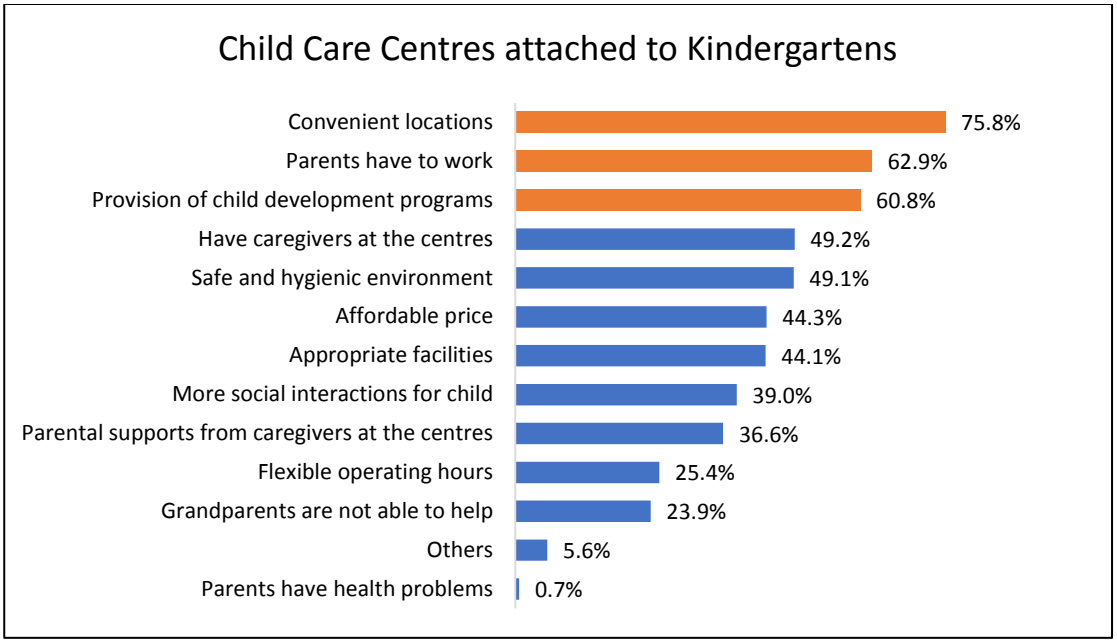


Figure 7. 2 Reasons for using Child Care Centres attached to Kindergartens

Regarding EHS, Figure 7.3 displays the percentage of different reasons for using this service. The top three reasons were "Parents have to work" (85.0%), followed by "Have caregivers at the centres" (69.7%), and "Convenient locations" (68.5%). Although EHS aims to provide longer service hours to meet the needs of families and working parents, "Flexible operating hours" (i.e. 24.0%) was not the major concern for using this service.

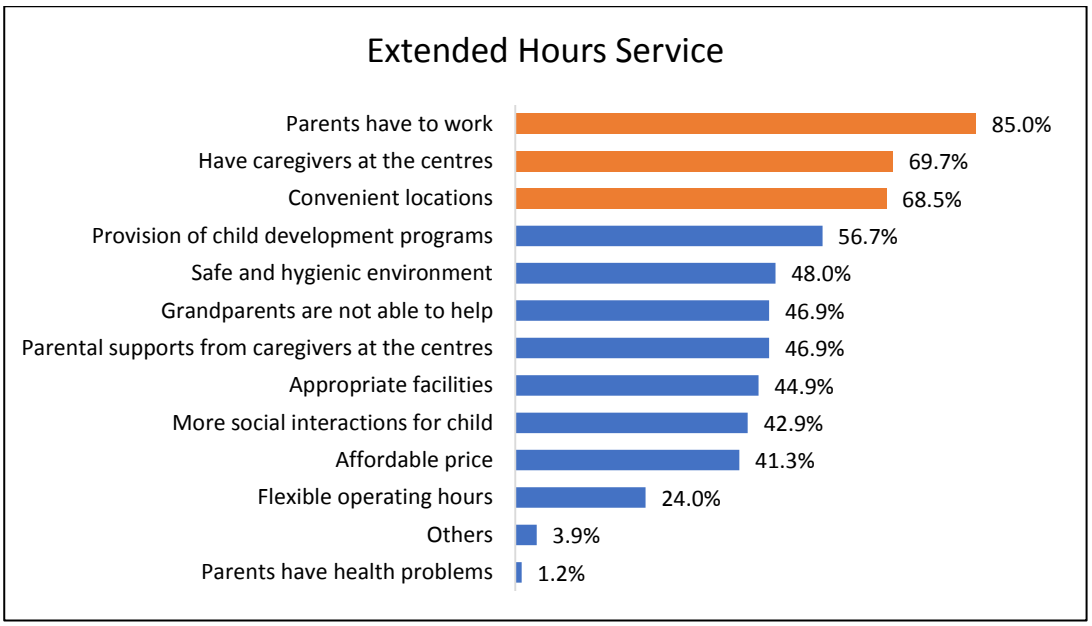


Figure 7. 3 Reasons for using Extended Hours Service

Regarding OCCS, Figure 7.4 displays the percentage of different reasons for using OCCS. The top three reasons were "Parents have to work" (i.e. 80.4%), followed by "Have caregivers at the centres" (i.e. 71.4%), and "Grandparents are not able to help" (i.e. 62.5%).

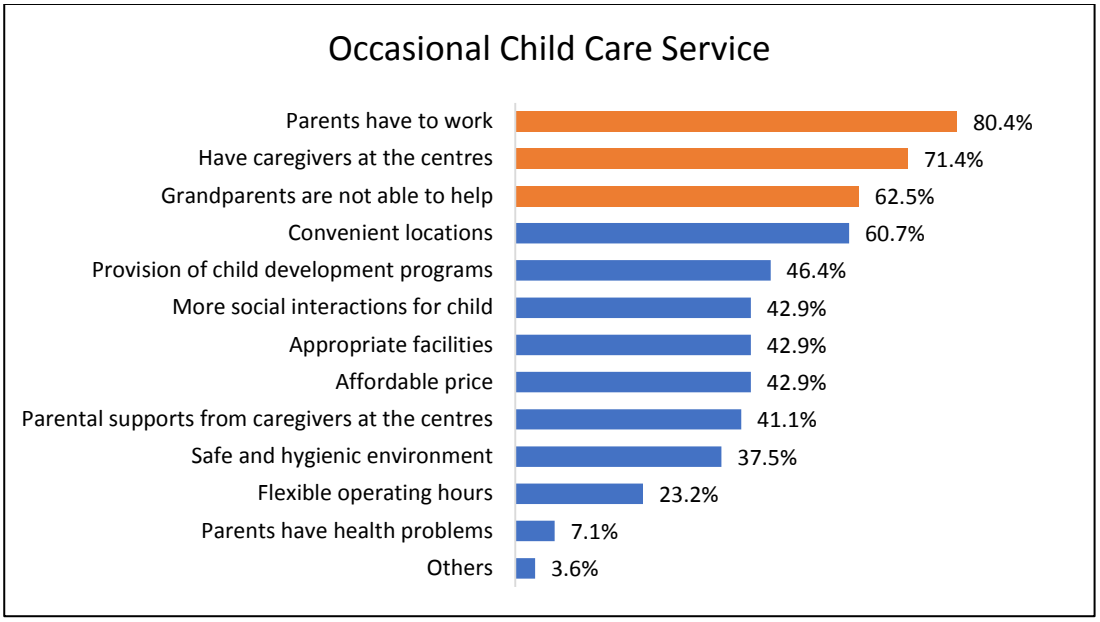


Figure 7. 4 Reasons for using Occasional Child Care Service

Regarding MHCCCs, Figure 7.5 displays the percentage of different reasons for using MHCCCs. The top three main reasons were "Convenient locations" (i.e. 79.3%), "Affordable price" (i.e. 62.1%), "Safe and hygienic environment" (i.e. 55.2%). It is important to note that the results should be interpreted with caution due to the small sample size.

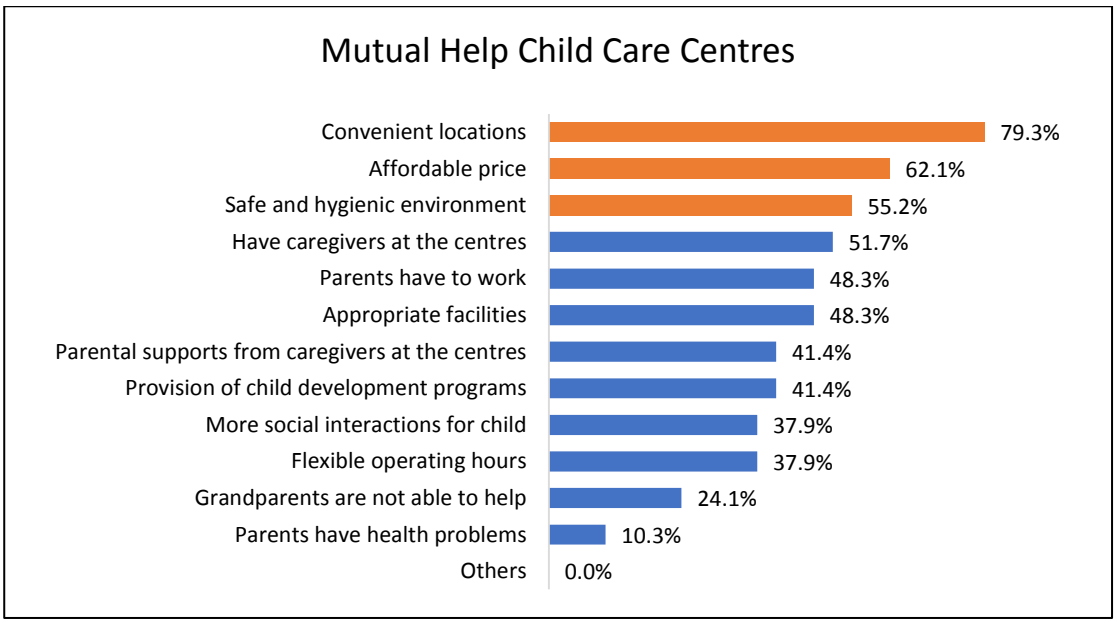


Figure 7. 5 Reasons for using Mutual Help Child Care Centres

Regarding NSCCP, Figure 7.6 displays the percentage of different reasons for using NSCCP service. The top three reasons were "Parents have to work" (75.3%), followed by "Convenient locations" (63.9%), and "Affordable price" (56.7%).

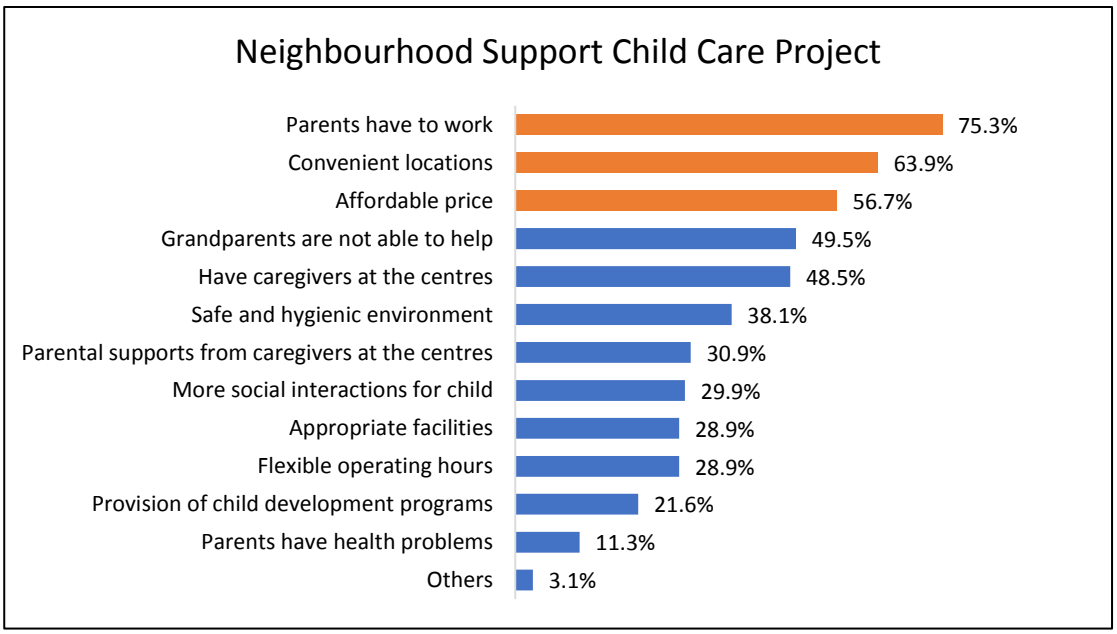


Figure 7. 6 Reasons for using Neighbourhood Support Child Care Project

According to Figure 7.1 to Figure 7.6, it is observed that parental working status and the quality-related factors of child care centres were the main reasons for using child care services. Comparing the top three main reasons using child care services across the six types of child care services, "Parents have to work" was the popular one. This indicates that families will resort to child care services in order to maintain their participation in the labour market. The result also shows that some common reasons for using child care services are quality-related (e.g. "Provision of child development programmes", "More social interactions for child" and "Have caregivers at

the centres"). It means that parents recognised the quality of care provided which played an important role in early child development, such as promoting cognitive development and allowing social interaction with other infants.

B. Households not using and not wait listing for any child care services (i.e. non-users)

Besides, the consultant team also studied the reasons why the households which were/had been eligible to use the child care services but did not use and not on the wait list. Among the 763 households who have completed the questionnaires for non-current users, 402 of them indicated that they were not using and not wait listed for child care services. Among these 402 households, only 392 of them are of valid data for analysis.

Figure 7.7 and Figure 7.8 show the reasons why the households did not use CCCs and NSCCP respectively. The top three main reasons not to use CCCs were "Grandparents can help out" (i.e. 41.3%), "Long waiting time" (i.e. 36.0%) and "Take care of the child by oneself" (i.e. 32.9%). While that for not using NSCCP were "Do not know that there are child care services" (i.e. 41.6%), "Grandparents can help out" (i.e. 33.2%) and "Take care of the child by oneself" (i.e. 26.8%). It indicates that when parents or other family members can look after their child, they are less likely to use the child care services. Besides, it should be noticed that some parents actually do not know the existence of child care services.

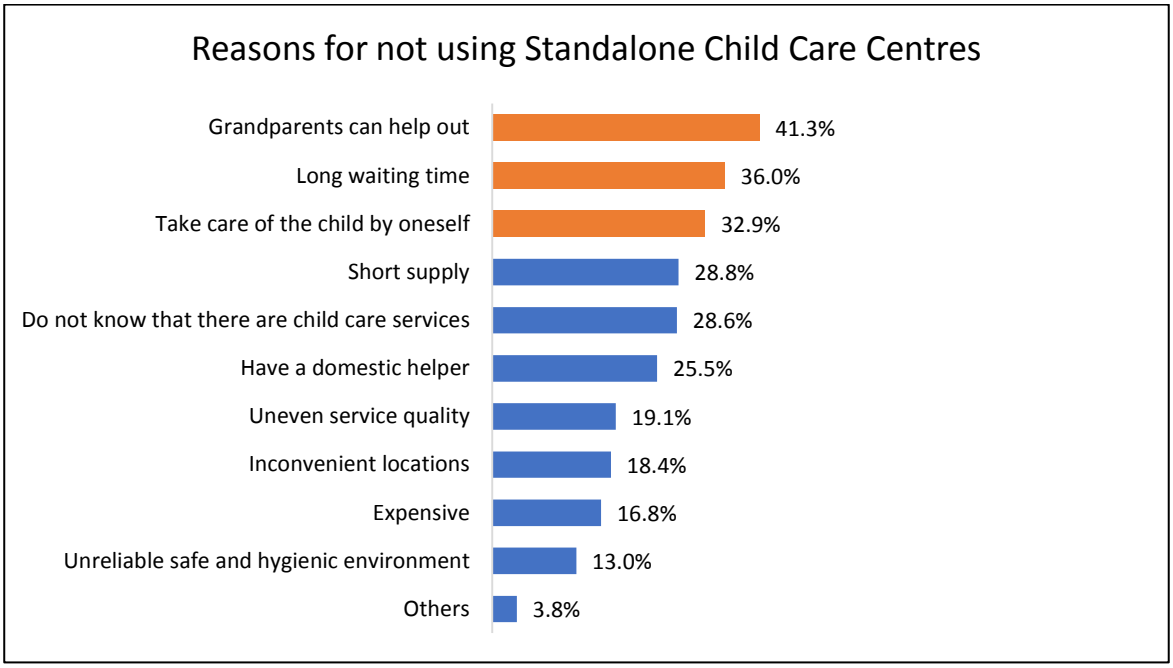


Figure 7. 7 Reasons for not using CCCs

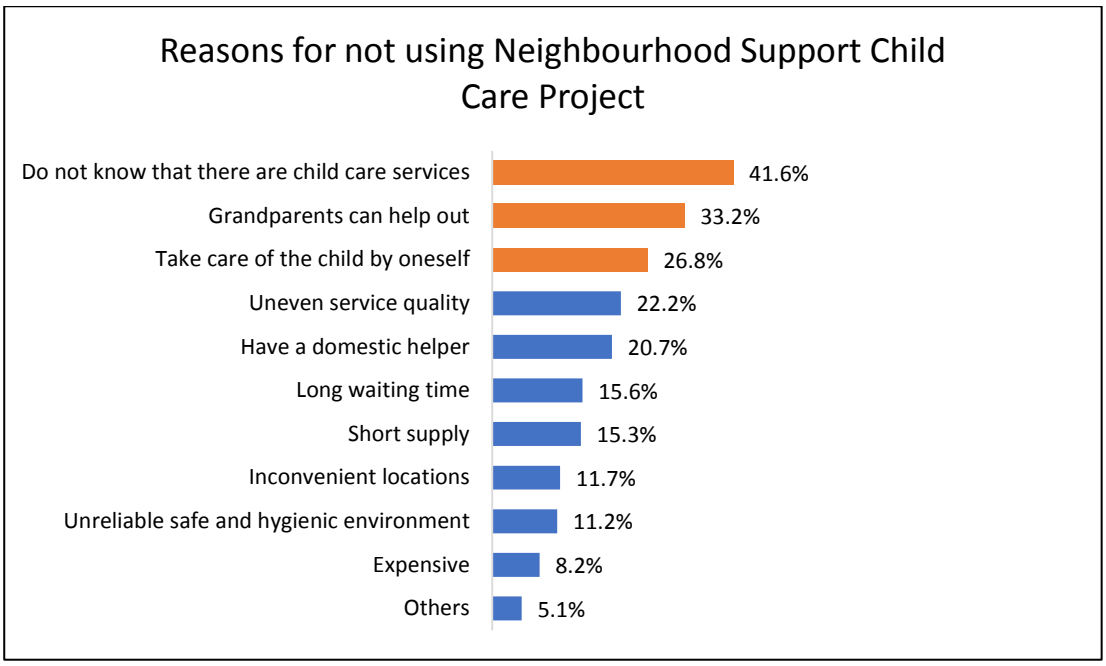


Figure 7. 8 Reasons for not using NSCCP

Appendix 8 Methodology of demand estimation on child care services

This section reported the methodology to estimate the demand (number of places) for child care services. Estimation of the demand for child care service were based on two parameters: (1) Hong Kong population of children at time *t* and (2) expected proportion of children population in certain types of households (stratified by their parental working status and household composition) using child care services at time *t*. The general form of the demand estimation can be represented below,

$$D_{it} = \sum n_{ijt} p_{ijt} \quad \text{.....8.1}$$

where:
(1) n_{ijt}: Hong Kong children population in age group i and household combination j at year *t*
(2) p_{ijt}: Expected proportion of children population using child care services in age group i and household combination j at year *t*
(3) D_{it}: Expected demand of child care services (i.e. no. of seats) for Hong Kong children population in age group i at year *t*

Estimation of the current demand for child care service
Given the general form of the demand estimation, the current demand for child care services in t_0 can be written as,

$$D_{it_0} = \sum n_{ijt_0} p_{ijt_0} \quad \text{.....8.2}$$

As seen, to derive the current demand of the child care service, data (n_{ijt_0}) of the current Hong Kong children population in age group i and household combination j in year of 2016 t_0 is needed which is available from CENSUS 2016.

Estimation of the future demand of the child care service
The future demand of the child care services in t_1 can be computed using the following estimation, which is

$$D_{it_1} = \sum n_{ijt_1} p_{ijt_1} \text{.....8.3}$$

As seen, to derive the future demand, data (n_{ijt_1}) of the future Hong Kong children population in age group i and household combination j in year t_1 is needed. However, no such data in the current settings. To most relevant data currently available in Hong Kong is the projected population provided by the Census and Statistics Department ("C&SD"). In particular, C&SD estimated the increase/decrease of Hong Kong population from 2016 to 2031 by a 5-year age-band (e.g. aged 0-4, aged 5-9 etc.). C&SD did not estimate the projected population by parental working status and household combination.

Putting back into the demand estimation, given the constraints, the estimation has to be modified to,

$$D_{it_1} = N^*_{it_1} P_{it_1} \text{.....8.4}$$

where:

(1) $N^*_{it_1}$: Estimated Hong Kong children population in age group i at year t_1

(2) P_{it_1}: Expected proportion of children population using child care services in age group i at year t_1

For $N^*_{it_1}$, given the age-band of the C&SD's projected population (5-year age band) does not directly correspond to the interests of this study (aged below 2, aged below 3, aged below 6), a computation based on the equation below is used to derive the projected Hong Kong children population in age group i at year t_1 ($N^*_{it_1}$).

$$N^*_{it_1} = N_{kt_1}\frac{N_{it_0}}{N_{kt_0}} \quad \ldots\ldots\ldots\ldots\ldots\ldots 8.5$$

where:

(1) N_{kt}: Projected Hong Kong children population in age group corresponding with C&SD's age-band categorization k at year t_1

(2) N_{kt_0}: Hong Kong children population in age group corresponding with C&SD's age-band categorization k at year t_0

(3) N_{it_0}: Hong Kong children population in age group i at year t_0

This computation was based on an assumption, which is the proportion of the age group i in the age-band categorization k is time invariant. It is believed that this assumption will generally hold true for a short-term projection (e.g. a 5-year projection). However, the error rate is likely to enlarge given a longer period of projection. The computation of $N^*_{it_1}$ is illustrated in Appendix 9.

Apart from $N^*_{it_1}$, the expected proportion of children population using child care services in age group i at year t_1 (P_{it_1}) is also an unknown parameter. To project it, it has to rely on the closest approximation from existing available data, which is the current expected proportion of children population using child care services in age group i at year t_0 (P_{it_0}). This can be derived from,

$$\mathrm{P}_{it_1} \approx \mathrm{P}_{it_0} = \sum_j \frac{n_{ijt_0}}{N_{it_0}} p_{ijt_0} \quad \ldots\ldots\ldots\ldots\ldots\ldots 8.6$$

As one can see, the P_{it_0} is essentially the average of p_{ijt_0} weighted by the children population in age group i and household combination j.

Estimation of planning ratio

Given that the planning ratio is set to the expected places per every 20 000 general population[66], the team also relies on this logic to derive the planning ratio for this study. Therefore, the general concept of estimating the planning ratio in here is by the following formula:

$$\text{Planning Ratio}_t = \frac{Estimated\ demand_t}{Total\ population_t} * 20\ \ 000 \quad \ldots\ldots\ldots\ldots\ldots\ldots 8.7$$

[66] Based on Clause 16 of the 1991 White Paper states that the "planning ratio for day nurseries is 100 aided places for every 20 000 of the general population.

Appendix 9 Components in the demand estimation and projection and the results

9.1 Hong Kong children population in age group i and household combination j (n_{ijt}), population projection ($\mathbf{N}^{*}_{\mathbf{it_1}}$) and total population

Based on Census 2016 data, children population can be segregated by households' parental working status and household composition. The rationale of segregating of the children population by these two parameters is based on the indications from the above sections (i.e. descriptive analysis of reasons of using/not using the service and results from the logistic regression models) that the likelihood of these sub-groups of children's (or households') using a child care service are likely to be different.

For the parental working status, there are six categories as below:

- Working parent from single-parent household
- Non-working parent from single-parent household
- Both working parents from two-parent household
- Only one working parent from two-parent household
- Both non-working parents from two-parent household
- No parent household

While for household composition (i.e. the child living with whom), there are five categories as below:

- Living with parents only
- Living with grandparents (and any other members except domestic helpers)
- Living with domestic helpers (and any other members except grandparents)
- Living both with grandparents and domestic helpers (and any other members)
- Living with non-grandparents and non-domestic helpers (i.e. living with any members except grandparents and domestic helpers)

Using Census 2016 (the latest available population data), the children population aged below 2, aged below 3, and aged below 6 at t_0 were 111 240, 164 020, and 346 600 respectively. Table 9.1 summarises the population of children in age group i and household combination j in time t_0 (i.e. year 2016).

Table 9.1 Hong Kong children population stratified by age group and household combination in year t_0

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Aged below 2 (n = 111 240)						
Living with parents only	1 442	3 306	12 002	19 282	2 113	NA
Living with grandparents	2 380	4 200	7 080	8 440	840	1 360
Living with domestic helpers	400	580	22 040	7 640	320	40
Living with grandparents and domestic helpers	220	280	3 340	1 200	180	440
Living with non-grandparents and non-domestic helpers	298	434	6 418	4 338	267	360
Aged below 3 (n = 164 020)						
Living with parents only	2 069	5 001	18 847	29 321	3 110	NA
Living with grandparents	3 160	5 600	9 740	11 900	1 320	1 960
Living with domestic helpers	680	1 000	32 700	11 600	500	80
Living with grandparents and domestic helpers	500	440	5 000	1 840	180	620
Living with non-grandparents and non-domestic helpers	431	659	7 573	6 599	390	1 200
Aged below 6 (n = 346 600)						
Living with parents only	5 508	11 186	42 754	64 986	6 883	NA
Living with grandparents	6 300	8 140	18 180	23 340	2 420	4 740
Living with domestic helpers	2 340	2 000	67 860	25 800	1 600	160
Living with grandparents and domestic helpers	1 020	660	10 860	3 780	380	1 240
Living with non-grandparents and non-domestic helpers	1 152	1 474	11 586	14 634	857	4 760

Derivation of population projection ($N^{*}_{it_1}$)

As C&SD only provides the projected population aged 0 to 4 and 5 to 9; thus, the team had to re-estimate the projected population of children with age groups interested with an assumption that the growth rate of each interested age group keeps constant in population growth. The estimated growth rates for children in different age groups are stated as below:

- Children aged below 2 = $\left(\frac{\text{Population aged below 2}}{\text{Population aged 0 to 4}}\right)_{2016} = \frac{111.2}{279.5}$
- Children aged below 3 = $\left(\frac{\text{Population aged below 3}}{\text{Population aged 0 to 4}}\right)_{2016} = \frac{164.0}{279.5}$
- Children aged below 6 = $\left(\frac{\text{Population aged below 6}}{\text{Population aged 0 to 9}}\right)_{2016} = \frac{347.0}{571.3}$

After that, the projected population of children in the interested age groups can be re-estimated by multiplying its growth rate to the projected population extracted from C&SD which is listed in Table 9.2. Also, the total Hong Kong population and projections are summarised in the same table. A breakdown of estimated population projection by interested age group is shown in Table 9.3.

Table 9.2 The mid-year projected population (thousands) by age group

	Aged 0 to 4	Aged 5 to 9	Aged 0 to 9	Total population
2016	279.5	291.8	571.3	7336.6
2021	280.2	304.3	584.5	7608.4
2026	263.6	292.5	556.1	7825.2
2031	236.6	276.6	513.2	7996.2

Table 9.3 The estimated population projection (thousands) by age group[67]

	Aged below 2	Aged below 3	Aged below 6
2016	111.2	164.0	347.0
2021	111.5	164.4	354.6
2026	104.9	154.7	337.4
2031	94.2	138.8	311.4

[67] The figures are rounded to 1 decimal place.

9.2 Expected proportion of children population using child care services in age group i and household combination j at year t (p_{ijt})

Logistic regression model is used to derive the expected proportion of children population using child care services. The general form of the model is set out below-

Dependent variable

The dependent variable of this model was a binary variable indicating whether the respondent "intended to use" or "not intended to use" a child care service. Responses coded as "intended to use" were either indicating that they were currently using a child care service or on the waiting list at the time of data collection. Responses coded as "not intended to use" were those who were not currently using a child care service and not on the waiting list at the time of data collection. Child care services here cover all six types of child care services but are not specific to any one type of the service.

Independent variables

According to HKPSG (2017)[68], it states that the provision of child care centres depends on the estimated demand, which would be affected by socio-economic factors, district characteristics and the provision of other child care support services within the district. In this model, variables that are considered that matched with this category, including household information (whether the child is living with a domestic helper, whether the child is living with grandparents; whether the child is living with a domestic helper and grandparents, nor neither of them; whether a child is living with both parents; whether a child is living with one parent only, or not living with parents; parents' age; parents' highest education attainment, household size; number of children in the household), households' socio-economic factors [parents' working status, monthly household income, housing type; recipient under Comprehensive Social Security Assistance ("CSSA")]. The model also considered the living districts of the households.

Analytical approach

Given the dependent variable is a binary outcome, a logistic regression analysis was performed to investigate the association of factors and the utilisation of child care service. For variable selection process, multi-collinearity issues among the independent variables were first taken into account. Then, a backward-selection approach was used for the variable selection. Model selection was based on change in log-likelihood and Akaike Information Criterion ("AIC")[69]. Pseudo-R^2 were also checked[70]. Based on the identified models, the probabilistic likelihood of

[68] The summary of Hong Kong Planning Standards and Guidelines (March 2017) published by HKSAR Planning Department is available at: https://www.pland.gov.hk/pland_en/tech_doc/hkpsg/sum/pdf/sum.pdf

[69] AIC is an estimator of the relative quality of statistical models for a given set of data.

[70] The pseduo R^2 (Nagelkerke's Pseudo R^2) can be in general interpreted as a goodness-of-fit measure for regression model. This statistic indicates the percentage of the variance in the dependent variable that the independent variables explain collectively. R^2= .00 represents a model that does not explain any of the variation in the dependent variable, whereas R^2= 1.00 represents a model that explains all of the variation in the dependent variable. Cohen (1988)

using child care services for a particular type of families was then estimated. Confidence intervals at 5% and 10% of the estimates were also reported.

The team performed three separate sets of analyses. One gear towards estimating the demand for child care services (1) for children aged under 2, (2) another for children aged under 3, and (3) another for children aged under 6.

Sample

Overall, the consultant team has collected 2 104 questionnaires with 1 387 from the community at large via online and 717 from the CCCs via printed questionnaires. Responses received from CCCs were excluded in this analysis to avoid over-representing the event group (i.e. those who are in use or intended to use child care). From 1 354 responses (households) collected from community[71], 462 responses are from households with at least one child with the age below 2; 675 responses are from households with at least one child with the age below 3 and 971 responses are from households with at least one child aged under 6. Within each response (household), the household can have multiple children (e.g. one household can have one child at the age of 2 and another at the age of 3). The questionnaire collected information about the age of all children within each household (and their child care service usage) and thus one single response may contribute to multiple data-points for data analysis (depending on the number of children within the household and whether they are in the eligible age range). Overall, there are 454, 680 and 1 053 children in the age group under 2, under 3 and under 6, respectively. The sample characteristics by age group are shown in Table 9.4 to Table 9.6 below.

proposed a general guideline that R^2 small than 0.02 could be interpreted as small value (representing weak explanation of the variation in the dependent model). Correspondingly, R^2 smaller than 0.13 and 0.26 represents medium and large value respectively (representing moderate or strong explanation of the variation in the dependent model). However, extent research including Cohen's work stressed R^2 is not an absolute measure of goodness-of-fit and should be cautiously interpreted in tandem with assumptions made and specific subject matter. The consultant team hence cautiously advices readers not to directly interpret the R^2 of this model as a direct indicator of the goodness-of-fit measure. The purpose of reporting is of references for potential future work. (Cohen, J. E. (1988). Statistical Power Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.)

[71] The team collected 1 387 responses from the community through online survey. Among them, 33 responses were not the targets of the study so they were excluded and this resulted in 1 354 responses.

Table 9.4 Characteristics of the sample aged below 2[72]

	Intended to use (N = 203) N(%)	Not intended to use (N = 251) N(%)
Father's age		
15-34	87 (42.9%)	166 (66.1%)
35-44	107 (52.7%)	84 (33.5%)
45 or above	9 (4.4%)	1 (0.4%)
Father's education attainment		
Secondary or below	51 (25.1%)	64 (25.5%)
Post-Secondary	25 (12.3%)	35 (13.9%)
Degree	75 (36.9%)	97 (38.6%)
Master or above	52 (25.6%)	55 (21.9%)
Mother's education attainment		
Secondary or below	51 (25.1%)	74 (29.5%)
Post-Secondary	27 (13.3%)	28 (11.2%)
Degree	84 (41.4%)	96 (38.2%)
Master or above	41 (20.2%)	53 (21.1%)
Living district		
Kowloon City	10 (4.9%)	6 (2.4%)
Tai Po	2 (1.0%)	9 (3.6%)
Central and Western	4 (2.0%)	8 (3.2%)
Yuen Long	9 (4.4%)	31 (12.4%)
Tuen Mun	36 (17.7%)	30 (12.0%)
Northern	12 (5.9%)	20 (8.0%)
Sai Kung	11 (5.4%)	19 (7.6%)
Sha Tin	20 (9.9%)	35 (13.9%)
Eastern	30 (14.8%)	14 (5.6%)
Yau Tsim Mong	15 (7.4%)	9 (3.6%)
Southern	-	8 (3.2%)
Tsuen Wan	16 (7.9%)	6 (2.4%)
Sham Shui Po	12 (5.9%)	5 (2.0%)
Wong Tai Sin	7 (3.4%)	10 (4.0%)
Kwai Tsing	11 (5.4%)	16 (6.4%)
Islands	1 (0.5%)	8 (3.2%)
Wan Chai	2 (1.0%)	2 (0.8%)
Kwun Tong	5 (2.5%)	15 (6.0%)
Household composition		
With grandparents and domestic helpers	3 (1.5%)	13 (5.2%)
With grandparents	44 (21.7%)	72 (28.7%)
With domestic helpers	25 (12.3%)	69 (27.5%)
With non-grandparents and non-domestic helpers	2 (1.0%)	2 (0.8%)
With parents only	129 (63.5%)	95 (37.8%)
Parental working status		
Single-parent X work	4 (2.0%)	10 (4.0%)
Single-parent X non-work	2 (1.0%)	6 (2.4%)
Two-parent X both non-working	-	-
Two-parent X one works	28 (13.8%)	76 (30.3%)
Two-parent X both work	168 (82.8%)	151 (60.2%)
No parents	1 (0.5%)	8 (3.2%)
Number of children		
1	129 (63.5%)	153 (61.0%)
2	65 (32.0%)	90 (35.9%)
3 or above	9 (4.4%)	8 (3.2%)
Monthly household income		
Less than $25,000	49 (24.1%)	60 (23.9%)
$25,000 to less than $80,000	130 (64.0%)	148 (59.0%)
$80,000 or above	24 (11.8%)	43 (17.1%)
Housing type		
Private housing	132 (65.0%)	155 (61.8%)
Home Ownership Scheme	37 (18.2%)	39 (15.5%)
Others	1 (0.5%)	5 (2.0%)
Public housing	33 (16.3%)	52 (20.7%)

[72] The figures of sample size are rounded to nearest integer while the figures of percentage are rounded to 1 decimal place.

Table 9.5 Characteristics of the sample aged below 3[73]

	Intended to use (N = 344) N (%)	Not intended to use (N = 336) N (%)
Father's age		
15-34	126 (36.6%)	204 (60.7%)
35-44	201 (58.4%)	131 (39%)
45 or above	17 (4.9%)	1 (0.3%)
Father's education attainment		
Secondary or below	99 (28.8%)	78 (23.2%)
Post-Secondary	45 (13.1%)	51 (15.2%)
Degree	122 (35.5%)	132 (39.3%)
Master or above	78 (22.7%)	75 (22.3%)
Mother's education attainment		
Secondary or below	89 (25.9%)	101 (30.1%)
Post-Secondary	46 (13.4%)	41 (12.2%)
Bachelor Degree	141 (41.0%)	122 (36.3%)
Master degree or above	68 (19.8%)	72 (21.4%)
Living district		
Kowloon City	14 (4.1%)	6 (1.8%)
Tai Po	7 (2.0%)	12 (3.6%)
Central and Western	8 (2.3%)	13 (3.9%)
Yuen Long	24 (7.0%)	35 (10.4%)
Tuen Mun	44 (12.8%)	37 (11.0%)
Northern	21 (6.1%)	22 (6.5%)
Sai Kung	18 (5.2%)	28 (8.3%)
Sha Tin	33 (9.6%)	51 (15.2%)
Eastern	46 (13.4%)	22 (6.5%)
Yau Tsim Mong	18 (5.2%)	12 (3.6%)
Southern	2 (0.6%)	9 (2.7%)
Tsuen Wan	28 (8.1%)	8 (2.4%)
Sham Shui Po	19 (5.5%)	9 (2.7%)
Wong Tai Sin	17 (4.9%)	17 (5.1%)
Kwai Tsing	20 (5.8%)	25 (7.4%)
Islands	6 (1.7%)	9 (2.7%)
Wan Chai	3 (0.9%)	3 (0.9%)
Kwun Tong	16 (4.7%)	18 (5.4%)
Household composition		
With grandparents and domestic helpers	7 (2.0%)	19 (5.7%)
With grandparents	70 (20.3%)	90 (26.8%)
With domestic helpers	54 (15.7%)	92 (27.4%)
With non-grandparents and non-domestic helpers	5 (1.5%)	2 (0.6%)
With parents only	208 (60.5%)	133 (39.6%)
Parental working status		
Single-parent X work	6 (1.7%)	13 (3.9%)
Single-parent X non-work	4 (1.2%)	7 (2.1%)
Two-parent X both non-working	1 (0.3%)	8 (2.4%)
Two-parent X one works	55 (16.0%)	97 (28.9%)
Two-parent X both work	276 (80.2%)	199 (59.2%)
No parents	2 (0.6%)	12 (3.6%)
Number of children		
1	203 (59.0%)	194 (57.7%)
2	124 (36.0%)	131 (39.0%)
3 or above	17 (4.9%)	11 (3.3%)
Monthly household income		
Less than $25,000	84 (24.4%)	89 (26.5%)
$25,000 to less than $80,000	220 (64.0%)	188 (56.0%)
$80,000 or above	40 (11.6%)	59 (17.6%)
Housing type		
Private housing	210 (61.0%)	197 (58.6%)
Home Ownership Scheme	63 (18.3%)	58 (17.3%)
Others	1 (0.3%)	5 (1.5%)
Public housing	70 (20.3%)	76 (22.6%)

[73] The figures of sample size are rounded to nearest integer while the figures of percentage are rounded to 1 decimal place.

Table 9.6 Characteristics of the sample aged below 6[74]

	Intended to use (N = 572) N (%)	Not intended to use (N = 481) N (%)
Father' s age		
15-34	172 (30.1%)	265 (55.1%)
35-44	365 (63.8%)	213 (44.3%)
45 or above	35 (6.1%)	3 (0.6%)
Father' s education attainment		
Secondary or below	191 (33.4%)	116 (24.1%)
Post-Secondary	80 (14.0%)	77 (16.0%)
Degree	190 (33.2%)	181 (37.6%)
Master or above	111 (19.4%)	107 (22.2%)
Mother' s education attainment		
Secondary or below	162 (28.3%)	150 (31.2%)
Post-Secondary	90 (15.7%)	52 (10.8%)
Bachelor Degree	216 (37.8%)	170 (35.3%)
Master degree or above	104 (18.2%)	109 (22.7%)
Living district		
Kowloon City	28 (4.9%)	12 (2.5%)
Tai Po	22 (3.8%)	18 (3.7%)
Central and Western	11 (1.9%)	26 (5.4%)
Yuen Long	45 (7.9%)	50 (10.4%)
Tuen Mun	66 (11.5%)	55 (11.4%)
Northern	33 (5.8%)	22 (4.6%)
Sai Kung	22 (3.8%)	37 (7.7%)
Sha Tin	56 (9.8%)	75 (15.6%)
Eastern	66 (11.5%)	33 (6.9%)
Yau Tsim Mong	21 (3.7%)	15 (3.1%)
Southern	2 (0.3%)	12 (2.5%)
Tsuen Wan	42 (7.3%)	13 (2.7%)
Sham Shui Po	39 (6.8%)	15 (3.1%)
Wong Tai Sin	23 (4.0%)	26 (5.4%)
Kwai Tsing	37 (6.5%)	27 (5.6%)
Islands	10 (1.7%)	10 (2.1%)
Wan Chai	3 (0.5%)	5 (1.0%)
Kwun Tong	46 (8.0%)	30 (6.2%)
Household composition		
With grandparents and domestic helpers	14 (2.4%)	26 (5.4%)
With grandparents	111 (19.4%)	119 (24.7%)
With domestic helpers	100 (17.5%)	134 (27.9%)
With non-grandparents and non-domestic helpers	10 (1.7%)	3 (0.6%)
With parents only	337 (58.9%)	199 (41.4%)
Parental working status		
Single-parent X work	9 (1.6%)	21 (4.4%)
Single-parent X non-work	6 (1.0%)	9 (1.9%)
Two-parent X both non-working	2 (0.3%)	9 (1.9%)
Two-parent X one works	112 (19.6%)	145 (30.1%)
Two-parent X both work	438 (76.6%)	282 (58.6%)
No parents	5 (0.9%)	15 (3.1%)
Number of children		
1	281 (49.1%)	249 (51.8%)
2	254 (44.4%)	211 (43.9%)
3 or above	37 (6.5%)	21 (4.4%)
Monthly household income		
Less than $25,000	155 (27.1%)	128 (26.6%)
$25,000 to less than $80,000	358 (62.6%)	269 (55.9%)
$80,000 or above	59 (10.3%)	84 (17.5%)
Housing type		
Private housing	336 (58.7%)	287 (59.7%)
Home Ownership Scheme	113 (19.8%)	82 (17.0%)
Others	4 (0.7%)	11 (2.3%)
Public housing	119 (20.8%)	101 (21.0%)

[74] The figures of sample size are rounded to nearest integer while the figures of percentage are rounded to 1 decimal place.

The resemblance of the sample data to the Hong Kong respective population was also examined. The variables used to evaluate the resemblance included family composition characteristics, such as number of parents, living with grandparents, domestic helpers, number of child in household and household variables (household income, and housing type). Chi-square tests are used to test if there is a significant difference in terms of the characteristics between the sample population and the Hong Kong population. The results are shown in Table 9.7 to Table 9.9 below.

Table 9.7 Comparison between sample population and Hong Kong population for sample group aged below 2[75,76]

	Children aged below 2			
	Sample		Hong Kong population	
	n	%	%	*p*
Family composition				
Number of parent(s)				
0	9	2.0%	2.0%	
1	22	4.8%	12.2%	*
2	423	93.2%	85.8%	*
Number of grandparent(s)				
0	322	70.9%	73.1%	
1 or above	132	29.1%	26.9%	
Number of domestic helper(s)				
0	344	75.8%	67.0%	*
1 or above	110	24.2%	33.0%	*
Number of children				
1	282	62.1%	50.2%	*
2	155	34.1%	41.5%	*
3 or above	17	3.7%	8.3%	*
Monthly household income, HK$				
Less than $25,000	109	24.0%	28.9%	*
$25,000 to less than $80,000	278	61.2%	51.3%	*
$80,000 or above	67	14.8%	19.8%	*
Housing types				
Subdivided units / Temporary housing	6	1.3%	3.7%	*
Owner – Public housing	19	4.2%	3.5%	
Owner – Private housing	186	41.0%	33.3%	*
Owner – Home Ownership Scheme	62	13.7%	10.4%	*
Rental – Public housing	66	14.5%	17.5%	
Rental – Private housing	101	22.2%	29.4%	*
Rental – Home Ownership Scheme	14	3.1%	2.2%	

[75] The figures of sample size are rounded to nearest integer while the figures of percentage rounded to 1 decimal place.
[76] Significance: * p-value < 0.05.

Table 9.8 Comparison between sample population and Hong Kong population for sample group aged below 3[77,78]

	Children aged below 3			
	Sample		Hong Kong population	
	n	%	%	*p*
Family composition				
Number of parent(s)				
0	14	2.1%	2.4%	
1	30	4.4%	11.9%	*
2	636	93.5%	85.7%	*
Number of grandparent(s)				
0	494	72.6%	74.2%	
1 or above	186	27.4%	25.8%	
Number of domestic helper(s)				
0	508	74.7%	66.4%	*
1 or above	172	25.3%	33.6%	*
Number of children				
1	397	58.4%	47.6%	*
2	255	37.5%	43.7%	*
3 or above	28	4.1%	8.7%	*
Monthly household income, HK$				
Less than $25,000	173	25.3%	28.9%	*
$25,000 to less than $80,000	408	60.0%	51.2%	*
$80,000 or above	99	14.6%	19.9%	*
Housing types				
Subdivided units / Temporary housing	6	0.9%	3.8%	*
Owner – Public housing	32	4.7%	3.4%	
Owner – Private housing	260	38.2%	33.1%	*
Owner – Home Ownership Scheme	96	14.1%	10.5%	*
Rental – Public housing	114	16.8%	17.9%	
Rental – Private housing	147	21.6%	29.2%	*
Rental – Home Ownership Scheme	25	3.7%	2.1%	*

[77] The figures of sample size are rounded to nearest integer while the figures of percentage are rounded to 1 decimal place.
[78] Significance: * p-value < 0.05.

Table 9.9 Comparison between sample population and Hong Kong population for sample group aged below 6[79,80]

	Children aged below 6			
	Sample		Hong Kong population	
	n	%	%	*p*
Family composition				
Number of parent(s)				
0	20	1.9%	3.1%	*
1	45	4.3%	11.5%	*
2	988	93.8%	85.4%	*
Number of grandparent(s)				
0	783	74.4%	76.6%	
1 or above	270	25.6%	23.4%	
Number of domestic helper(s)				
0	779	74.0%	66.0%	*
1 or above	274	25.6%	34.0%	*
Number of children				
1	530	50.3%	41.3%	*
2	465	44.2%	49.1%	*
3 or above	58	5.5%	9.6%	*
Monthly household income, HK$				
Less than $25,000	627	59.5%	32.8%	*
$25,000 to less than $80,000	283	26.9%	48.1%	*
$80,000 or above	143	13.6%	19.1%	*
Housing types				
Subdivided units / Temporary housing	15	1.4%	4.0%	*
Owner – Public housing	41	3.9%	3.1%	
Owner – Private housing	399	37.9%	32.7%	*
Owner – Home Ownership Scheme	150	14.2%	10.8%	*
Rental – Public housing	179	17.0%	18.8%	
Rental – Private housing	224	21.3%	28.6%	*
Rental – Home Ownership Scheme	45	4.3%	2.0%	*

[79] The figures of sample size are rounded to nearest integer while the figures of percentage are rounded to 1 decimal place.
[80] Significance: * p-value < 0.05.

Based on visual inspection, the distribution of the variables from the sample were generally comparable to the Hong Kong respective population, with the exception that the sample appear to have a higher concentration of households without domestic helpers and comparatively well-off households (household with monthly household income >HK$80,000). When performing statistical examination, there were however notable differences on the distributions across multiple variables. This indicates that the sample collected from the questionnaire may not be fully comparable with the Hong Kong general population (at the respective age range). This may have introduced biases to the probabilistic estimates. The consultant team used the cell weighting technique to adjust for the potential issue but admittedly to what extent does the issue introduce bias to the estimates are unknown. Therefore, caution should be exercised when interpreting the results. Nevertheless, data collected from the questionnaires provide crucial information informing the demand projection of the child care services in Hong Kong. To the best of the consultant team's knowledge, currently there is no similar dataset available in Hong Kong that can facilitate a thorough projection.

Logistic regression analysis predicting service utilisation

The analysis attempted to correct the bias with the employment of cell weighting[81]. Particularly, the sample by the monthly household income and parents' working status was segmented, and the sample and population proportions for each of the segmented category were obtained. A weighting variable, which adjusts each sample proportion to its corresponding population proportion, was created and included in the model estimation, such that inferences from the results can be more closely resemble with the population. Specifically, in a model for children in age group i the weights by household income (m) and parents' working statuses (n) for each child in the sample were calculated as follows:

$$w_{ij,r} = \frac{Pr_{imn}}{pr_{imn}}$$

where

(1) Pr_{imn}: the proportion of children in category (m, n) among all children in age group i in Hong Kong (i.e. at population level)

(2) pr_{imn}: the proportion of children in category (m, n) among all children in age group i captured in the sample

Weighting parameters used in the model estimations are shown in Table 9.10 below.

[81] Kalton, G., & Flores-Cervantes, I. (2003). Weighting methods. Journal of Official Statistics, 19(2), 81.

Table 9.10 Weighting parameters (i.e. monthly household income X parental working status) used in the model estimation[83]

	Aged below 2			Aged below 3			Aged below 6		
HK$	N	n	w	N	n	w	N	n	w
Less than $25,000									
Both parents working	2.3%	10.0%	0.2	2.3%	10.9%	0.2	2.8%	10.6%	0.3
One parent working	17.9%	13.0%	1.4	18.4%	12.3%	1.5	20.0%	14.3%	1.4
Both non-working	7.1%	1.1%	6.5	6.9%	3.0%	2.3	7.2%	2.8%	2.5
No parents	1.0%	0.9%	1.2	1.0%	0.9%	1.2	1.3%	1.1%	1.2
$25,000 to less than $80,000									
Both parents working	28.1%	46.1%	0.6	27.9%	44.1%	0.6	26.6%	43.5%	0.6
One parent working	18.9%	12.4%	1.5	18.8%	12.9%	1.5	18.6%	12.7%	1.5
Both non-working	3.8%	0.9%	4.4	3.7%	0.6%	6.5	2.5%	0.5%	4.5
No parents	0.7%	1.1%	0.6	0.7%	1.3%	0.5	0.7%	1.1%	0.6
$80,000 or above									
Both parents working	15.3%	13.3%	1.2	14.7%	12.9%	1.1	14.2%	11.8%	1.2
One parent working	4.2%	1.3%	3.2	4.3%	1.1%	3.8	4.5%	1.2%	3.8
Both non-working	0.4%	-	-	0.5%	0.1%	3.5	0.5%	0.1%	5.5
No parents	0.3%	-	-	0.7%	-	-	1.2%	0.1%	13.1

[83] The figures are rounded to 1 decimal place.

Results of the logistic regression model

Logistic regression analyses were performed to identify how the independents may affect the intention to child care services. Table 9.11 to Table 9.13 summarise the results. Based on these results, the likelihood that a child in particular age group and certain type of household intends to use child care services was derived and shown in Table 9.14 to Table 9.16 below. A higher value indicates a child in particular age group and certain type of household is more likely to use the services (1 indicates all children in particular age group and certain type of household intend to use child care services; 0 indicates children in a particular age group and certain type of household intend to use child care services). This information formed the basis for the demand estimation.

Table 9.11 Odd ratios (with 95% confidence intervals) estimated from logistic regression analysis (sample: children aged below 2)[84,85,86,87]

	OR	(95% CI) Lower	Upper	p
Father's age				
15-34		*Reference*		
35-44	2.3986	1.4131	4.1156	**
45 or above	5.9066	0.8211	77.7626	
Father's education attainment				
Secondary or below		*Reference*		
Post-Secondary	0.8772	0.3409	2.209	
Degree	1.0345	0.4583	2.3393	
Master or above	1.5337	0.6	3.9509	
Mother's education attainment				
Secondary or below		*Reference*		
Post-Secondary	2.6126	1.0613	6.5365	*
Degree	1.0442	0.4697	2.3216	
Master or above	0.8892	0.3475	2.2602	
Living district				
Kowloon City		*Reference*		
Tai Po	0.0872	0.0025	0.9815	.
Central and Western	0.2883	0.0357	1.8356	
Yuen Long	0.2521	0.0555	1.0729	.
Tuen Mun	0.7061	0.1863	2.5968	
Northern	0.3382	0.0733	1.4819	
Sai Kung	0.4611	0.1078	1.8866	
Sha Tin	0.2569	0.0614	1.0199	.
Eastern	0.8459	0.2012	3.4381	
Yau Tsim Mong	1.0807	0.2287	5.0675	
Southern	-	-	-	
Tsuen Wan	2.0646	0.4248	10.5692	
Sham Shui Po	11.325	1.5761	119.2939	*
Wong Tai Sin	0.2741	0.05	1.3773	
Kwai Tsing	0.3126	0.064	1.4482	
Islands	0.1316	0.0072	1.1178	.
Wan Chai	0.8899	0.0584	17.831	
Kwun Tong	0.1688	0.0244	0.9625	
Household composition				
With grandparents and domestic helpers		*Reference*		
With grandparents	3.2719	0.6031	24.1761	
With domestic helpers	1.546	0.2827	11.2784	
With non-grandparents and non-domestic helpers	6.4299	0.3025	149.2352	
With parents only	7.2023	1.4181	50.8805	*
Parental working status				
Single-parent X work		*Reference*		
Single-parent X non-work	0.1339	0.0171	0.7727	*
Two-parent X one works	0.6388	0.1995	2.2388	
Two-parent X both work	2.4562	0.8213	8.3155	
No parents	0.3198	0.0049	3.7755	
Number of children				
1		*Reference*		
2	1.1974	0.6722	2.1363	
3 or above	2.5358	0.6877	9.4833	
Monthly household income				
$25,000 to less than $80,000		*Reference*		
Less than $25,000	1.4617	0.6993	3.0845	
$80,000 or above	0.4854	0.2276	1.0148	.
Housing type				
Others		*Reference*		
Private	1.0663	0.1599	12.1626	
Home Ownership Scheme	1.3566	0.1929	16.0568	
Public housing	0.8378	0.1242	9.6069	

[84] All figures are rounded to 4 decimal places.

[85] Significance: . p-value < 0.1; * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001

[86] Weighting parameter is included in the model.

[87] Cohen (1988) proposed a general guideline that R^2 small than 0.02 could be interpreted as small value (representing weak explanation of the variation in the dependent model). Correspondingly, R^2 smaller than 0.13 and 0.26 represents medium and large value respectively (representing moderate or strong explanation of the variation in the dependent model). However, extent research including Cohen's work stressed R^2 is not an absolute measure of goodness-of-fit and should be cautiously interpreted in tandem with assumptions made and specific subject matter. The consultant team hence cautiously advises readers not to directly interpret the R^2 of this model as a direct indicator of the goodness-of-fit measure. The purpose of reporting is of references for potential future work. (Cohen, J. E. (1988). Statistical Power Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.)

Table 9.12 Odd ratios (with 95% confidence intervals) estimated from logistic regression analysis (sample: children aged below 3)[88,89,90,91]

	OR	(95% CI) Lower	Upper	p
Father's age				
15-34		*Reference*		
35-44	2.2808	1.5455	3.3852	***
45 or above	8.9692	1.7634	90.4185	*
Father's education attainment				
Secondary or below		*Reference*		
Post-Secondary	0.5098	0.253	1.0116	.
Degree	0.5503	0.2911	1.0284	.
Master or above	0.6858	0.3299	1.4156	
Mother's education attainment				
Secondary or below		*Reference*		
Post-Secondary	1.6709	0.8447	3.3259	
Degree	1.1122	0.6071	2.0438	
Master or above	1.0499	0.517	2.1405	
Living district				
Kowloon City		*Reference*		
Tai Po	0.2296	0.0487	0.9803	.
Central and Western	0.2003	0.0415	0.8674	*
Yuen Long	0.3663	0.1027	1.2226	
Tuen Mun	0.3886	0.1149	1.2256	
Northern	0.3339	0.0892	1.17	.
Sai Kung	0.2877	0.0797	0.9692	*
Sha Tin	0.1628	0.0467	0.5237	**
Eastern	0.6421	0.1837	2.0987	
Yau Tsim Mong	0.5253	0.1359	1.9272	
Southern	0.0559	0.0036	0.4291	*
Tsuen Wan	1.2724	0.324	4.9534	
Sham Shui Po	1.3986	0.3258	6.014	
Wong Tai Sin	0.278	0.0713	1.012	.
Kwai Tsing	0.2002	0.0523	0.7094	*
Islands	0.4035	0.0836	1.8024	
Wan Chai	3	0.4523	22.6145	
Kwun Tong	0.2928	0.0711	1.1272	.
Household composition				
With grandparents and domestic helpers		*Reference*		
With grandparents	4.2332	1.2582	16.8277	*
With domestic helpers	3.0021	0.9076	11.6778	.
With non-grandparents and non-domestic helpers	33.9526	4.5329	348.339	**
With parents only	9.6422	3.0099	36.847	***
Parental working status				
Single-parent X work		*Reference*		
Single-parent X non-work	0.2815	0.0781	0.9919	*
Two-parent X both non-work	0.1387	0.0187	0.7596	*
Two-parent X one works	0.7902	0.3057	2.1881	
Two-parent X both work	2.4224	0.9799	6.5024	.
No parents	0.201	0.0107	1.5131	
Number of children				
1		*Reference*		
2	1.2357	0.8164	1.8738	
3 or above	2.1901	0.8637	5.698	
Monthly household income				
$25,000 to less than $80,000		*Reference*		
Less than $25,000	0.8831	0.4993	1.5576	
$80,000 or above	0.491	0.2769	0.8606	*
Housing type				
Others		*Reference*		
Private	2.5577	0.4075	29.8452	
Home Ownership Scheme	2.8051	0.4304	33.5554	
Public housing	2.5162	0.4064	29.1991	

[88] All figures are rounded to 4 decimal places.

[89] Significance: . p-value < 0.1; * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001

[90] Weighting parameter is included in the model.

[91] Cohen (1988) proposed a general guideline that R^2 small than 0.02 could be interpreted as small value (representing weak explanation of the variation in the dependent model). Correspondingly, R^2 smaller than 0.13 and 0.26 represents medium and large value respectively (representing moderate or strong explanation of the variation in the dependent model). However, extent research including Cohen's work stressed R^2 is not an absolute measure of goodness-of-fit and should be cautiously interpreted in tandem with assumptions made and specific subject matter. The consultant team hence cautiously advises readers not to directly interpret the R^2 of this model as a direct indicator of the goodness-of-fit measure. The purpose of reporting is of references for potential future work. (Cohen, J. E. (1988). Statistical Power Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.)

Table 9.13 Odd ratios (with 95% confidence intervals) estimated from logistic regression analysis (sample: children aged below 6) [92,93,94,95]

	OR	(95% CI) Lower	Upper	p
Father's age				
15-34		*Reference*		
35-44	2.2789	1.6808	3.1012	***
45 or above	10.1682	3.5774	37.0452	***
Father's education attainment				
Secondary or below		*Reference*		
Post-Secondary	0.5635	0.3289	0.9568	*
Degree	0.6302	0.3838	1.028	.
Master or above	0.6374	0.3599	1.1227	
Mother's education attainment				
Secondary or below		*Reference*		
Post-Secondary	2.5287	1.4894	4.3465	***
Degree	1.4925	0.9339	2.3961	.
Master or above	1.1824	0.6806	2.0617	
Living district				
Kowloon City		*Reference*		
Tai Po	0.578	0.2124	1.5384	
Central and Western	0.1752	0.0556	0.5111	**
Yuen Long	0.3724	0.1516	0.8845	*
Tuen Mun	0.4266	0.1775	0.9927	.
Northern	0.7573	0.2808	2.0051	
Sai Kung	0.2552	0.0968	0.6478	**
Sha Tin	0.2795	0.1175	0.6409	**
Eastern	0.8215	0.339	1.9351	
Yau Tsim Mong	0.6177	0.2161	1.7224	
Southern	0.0473	0.0033	0.2896	**
Tsuen Wan	1.1826	0.4502	3.0858	
Sham Shui Po	1.5221	0.5512	4.2302	
Wong Tai Sin	0.3547	0.1288	0.9501	*
Kwai Tsing	0.4668	0.1768	1.2016	
Islands	0.6533	0.1941	2.1596	
Wan Chai	1.798	0.3723	8.8525	
Kwun Tong	0.5715	0.2227	1.4312	
Household composition				
With grandparents and domestic helpers		*Reference*		
With grandparents	2.271	0.9661	5.6085	.
With domestic helpers	1.4952	0.6562	3.5775	
With non-grandparents and non-domestic helpers	11.6053	2.6515	61.5731	**
With parents only	4.1002	1.8478	9.6191	***
Parental working status				
Single-parent X work		*Reference*		
Single-parent X non-work	0.5411	0.1881	1.5444	
Two-parent X both non-work	0.3968	0.1009	1.4158	
Two-parent X one works	1.4963	0.7019	3.3552	
Two-parent X both work	3.6974	1.7404	8.2838	***
No parents	1.2899	0.3155	4.8372	
Number of children				
1		*Reference*		
2	1.4972	1.0891	2.0634	*
3 or above	2.2929	1.2057	4.4219	*
Monthly household income				
$25,000 to less than $80,000		*Reference*		
Less than $25,000	1.1633	0.747	1.8159	
$80,000 or above	0.5211	0.3354	0.8056	**
Housing type				
Others		*Reference*		
Private	5.3007	1.427	23.9484	*
Home ownership scheme	6.8486	1.7962	31.5889	**
Public housing	5.0065	1.3487	22.7479	*

[92] All figures are rounded to 4 decimal places.

[93] Significance: . p-value < 0.1; * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001

[94] Weighting parameter is included in the model.

[95] Cohen (1988) proposed a general guideline that R^2 small than 0.02 could be interpreted as small value (representing weak explanation of the variation in the dependent model). Correspondingly, R^2 smaller than 0.13 and 0.26 represents medium and large value respectively (representing moderate or strong explanation of the variation in the dependent model). However, extent research including Cohen's work stressed R^2 is not an absolute measure of goodness-of-fit and should be cautiously interpreted in tandem with assumptions made and specific subject matter. The consultant team hence cautiously advises readers not to directly interpret the R^2 of this model as a direct indicator of the goodness-of-fit measure. The purpose of reporting is of references for potential future work. (Cohen, J. E. (1988). Statistical Power Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.)

Table 9.14 Expected proportion of child care services utilisation for children aged under 2 stratified by parental working status and the household composition[96,97,98]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	0.36 (0.36 - 0.37) [0.35 - 0.38]	0.30 (0.29 - 0.31) [0.28 - 0.32]	0.69 (0.62 - 0.75) [0.55 - 0.80]	0.20 (0.02 - 0.73) [0.00 - 0.97]	-	NA
Living with grandparents	0.20 (0.19 - 0.20) [0.19 - 0.21]	0.03 (0.03 - 0.03) [0.03 - 0.04]	0.48 (0.47 - 0.48) [0.47 - 0.49]	0.08 (0.02 - 0.29) [0.00 - 0.66]	-	0.07 (0.07 - 0.08) [0.06 - 0.08]
Living with domestic helpers	0.07 (0.07 - 0.07) [0.06 - 0.08]	0.01 (0.01 - 0.01) [0.01 - 0.01]	0.28 (0.28 - 0.29) [0.28 - 0.29]	0.08 (0.07 - 0.08) [0.07 - 0.08]	-	-
Living with grandparents and domestic helpers	-	-	0.01 (0.00 - 0.99) [0.00 – 1.00]	0.04 (0.04 - 0.05) [0.04 - 0.05]	-	-
Living with non-grandparents and non-domestic helpers	-	-	0.72 (0.71 - 0.74) [0.69 - 0.75]	0.37 (0.35 - 0.39) [0.33 - 0.40]		-

[96] All figures are rounded to 2 decimal places and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

[97] As the survey did not include samples from all combinations based on parental working status and household composition; thus, the model cannot estimate the expected likelihood of the child cares services utilization for some groups (i.e. with a "-"mark as indication).

[98] The magnitude of some figures is too small and may not be displayed accurately due to the rounding issue.

Table 9.15 Expected proportion of child care services utilisation for children aged under 3 stratified by parental working status and the household composition[99,100,101]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	0.38 (0.37 - 0.39) [0.36 - 0.39]	0.35 (0.34 - 0.35) [0.34 - 0.36]	0.73 (0.73 - 0.73) [0.73 - 0.74]	0.43 (0.42 - 0.43) [0.42 - 0.43]	0.13 (0.13 - 0.14) [0.12 - 0.15]	NA
Living with grandparents	0.27 (0.26 - 0.27) [0.26 - 0.28]	0.12 (0.12 - 0.13) [0.12 - 0.13]	0.52 (0.52 - 0.53) [0.52 - 0.53]	0.21 (0.21 - 0.21) [0.21 - 0.22]	0.04 (0.04 - 0.04) [0.04 - 0.04]	0.07 (0.07 - 0.08) [0.06 - 0.08]
Living with domestic helpers	0.11 (0.11 - 0.11) [0.10 - 0.12]	0.09 (0.08 - 0.09) [0.08 - 0.10]	0.41 (0.41 - 0.42) [0.41 - 0.42]	0.19 (0.19 - 0.19) [0.18 - 0.20]	-	-
Living with grandparents and domestic helpers	0.17 (0.16 - 0.17) [0.15 - 0.18]	-	0.23 (0.22 - 0.23) [0.21 - 0.24]	0.07 (0.07 - 0.07) [0.07 - 0.08]	-	-
Living with non-grandparents and non-domestic helpers	-	-	0.93 (0.93 - 0.94) [0.93 - 0.94]	0.75 (0.74 - 0.76) [0.73 - 0.77]	-	-

[99] All figures are rounded to 2 decimal places and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

[100] As the survey did not include samples from all combinations based on parental working status and household composition; thus, the model cannot estimate the expected likelihood of the child cares services utilization for some groups (i.e. with a "-" mark as indication).

[101] The magnitude of some figures is too small and may not be displayed accurately due to the rounding issue.

Table 9.16 Expected proportion of child care services utilisation for children aged under 6 stratified by parental working status and the household composition[102,103,104]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	0.33 (0.32 - 0.33) [0.32 - 0.34]	0.35 (0.34 - 0.35) [0.34 - 0.36]	0.74 (0.74 - 0.74) [0.74 - 0.74]	0.50 (0.49 - 0.50) [0.49 - 0.50]	0.20 (0.20 - 0.21) [0.19 - 0.21]	NA
Living with grandparents	0.21 (0.21 - 0.22) [0.20 - 0.22]	0.18 (0.17 - 0.18) [0.17 - 0.18]	0.59 (0.59 - 0.59) [0.58 - 0.60]	0.31 (0.31 - 0.31) [0.30 - 0.31]	0.09 (0.09 - 0.09) [0.09 - 0.10]	0.26 (0.26 - 0.27) [0.25 - 0.28]
Living with domestic helpers	0.17 (0.17 - 0.18) [0.16 - 0.18]	0.17 (0.16 - 0.17) [0.16 - 0.18]	0.47 (0.47 - 0.47) [0.47 - 0.48]	0.28 (0.27 - 0.28) [0.27 - 0.28]	-	-
Living with grandparents and domestic helpers	0.19 (0.18 - 0.19) [0.18 - 0.20]	-	0.32 (0.31 - 0.32) [0.30 - 0.33]	0.21 (0.21 - 0.21) [0.20 - 0.22]	-	-
Living with non-grandparents and non-domestic helpers	-	0.75 (0.74 - 0.76) [0.73 - 0.77]	0.92 (0.92 - 0.92) [0.91 - 0.93]	0.75 (0.74 - 0.76) [0.73 - 0.76]	-	-

[102] All figures are rounded to 2 decimal places and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

[103] As the survey did not include samples from all combinations based on parental working status and household composition; thus, the model cannot estimate the expected likelihood of the child cares services utilization for some groups (i.e. with a "-" mark as indication).

[104] The magnitude of some figures is too small and may not be displayed accurately due to the rounding issue.

Based on the logistic regression analysis on the data drawing from the questionnaires, the consultant team derived the probabilistic likelihoods of using child care services of a child from a specific household combination. In this context, it can be interpreted as the expected proportion of sub-groups in specific household combination to children population's likelihood to use the child care services (those who were identified as intended to use will be interpreted as they are likely to use a child care service).

However, due to small sample size and hence the lack of sample of certain subgroups, one can see that there is missing information on expected proportions (*p*) for some sub-groups of children as shown above (e.g. there are no estimates for the sub-group of single working parent living with grandparents and domestic helpers of children aged below 2). Given this issue, the consultant team used several informed estimations to derive these figures. Specifically, these informed estimations were largely derived by following the two logics described below.

> Logic 1: if the missing *p* for a particular age group (e.g. aged below 2) is available from another age group (e.g. aged below 3), the available *p* from will be adopted and to fill up the missing *p*
>
> Logic 2: The second logics will be used only if the missing *p* cannot be fulfilled by (1). For this logical deduction, the estimations are informed by its neighboring cell (neighboring sub-group of children from a particular household configuration). In particular, for the missing *p* among the categories of (1) single-parent household and (2) two-parent household, the missing *p* are all under the "non-work" group. Under the information (from results from the regression models) that households with non-working parents are unlikely to have a higher likelihood of using a child care service, the consultant team simply borrow the *p* from households with working parents and the same category of household composition to fill in the missing *p*. This approximation more likely overestimates the expected proportion, as the consultant team was expecting the *p* form a "non-working" household should be smaller than a "working" household. However, given that there is no logical deduction to derive the magnitude of the reduction, the consultant team takes a more conservative way to estimate the *p.* For the "no-parent household", given that there is no differentiation by working status, the consultant team uses the household composition to inform the estimation. Given the missing *p* for all the three age groups are all at the "living with domestic helpers" and "living with grandparents and domestic helpers", which should be more closely resembled by the group of "living with grandparents" than the "Living with non-grandparents and non-domestic helpers", the consultant team therefore adopts the *p* from the former group for the estimations.

Given these deliberations, the *p* used for the demand estimation is filled and shown from Table 9.17 to Table 9.19 below.

Table 9.17 Expected proportion of children population aged under 2 and in household combination j using child care services at year t (p_{ijt})[105,106]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	0.36 (0.36 - 0.37) [0.35 - 0.38]	0.30 (0.29 - 0.31) [0.28 - 0.32]	0.69 (0.62 - 0.75) [0.55 - 0.80]	0.20 (0.02 - 0.73) [0.00 - 0.97]	0.13# (0.13-0.14) [0.12-0.15]	NA
Living with grandparents	0.20 (0.19 - 0.20) [0.19 - 0.21]	0.03 (0.03 - 0.03) [0.03 - 0.04]	0.48 (0.47 - 0.48) [0.47 - 0.49]	0.08 (0.02 - 0.29) [0.00 - 0.66]	0.04# (0.04-0.04) [0.04-0.04]	0.07 (0.07 - 0.08) [0.06 - 0.08]
Living with domestic helpers	0.07 (0.07 - 0.07) [0.06 - 0.08]	0.01 (0.01 - 0.01) [0.01 - 0.01]	0.28 (0.28 - 0.29) [0.28 - 0.29]	0.08 (0.07 - 0.08) [0.07 - 0.08]	0.08* (0.07-0.08) [0.07-0.08]	0.07* (0.07 - 0.08) [0.06 - 0.08]
Living with grandparents and domestic helpers	0.17# (0.16 - 0.17) [0.15 - 0.18]	0.17* (0.16 - 0.17) [0.15 - 0.18]	0.01 (0.00 - 0.99) [0.00 - 1.00]	0.04 (0.04 - 0.05) [0.04 - 0.05]	0.04* (0.04-0.05) [0.04-0.05]	0.07* (0.07 - 0.08) [0.06 - 0.08]
Living with non-grandparents and non-domestic helpers	0.75* (0.74 - 0.76) [0.73 - 0.77]	0.75# (0.74 - 0.76) [0.73 - 0.77]	0.72 (0.71 - 0.74) [0.69 - 0.75]	0.37 (0.35 - 0.39) [0.33 - 0.40]	0.37* (0.35-0.39) [0.33-0.4]	0.07* (0.07 - 0.08) [0.06 - 0.08]

Figures are derived based on Logic 1.

* Figures are derived based on Logic 2.

[105] All figures are rounded to 2 decimal places and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

[106] The magnitude of some figures is too small and may not be displayed accurately due to the rounding issue.

Table 9.18 Expected proportion of children population aged under 3 and in household combination j using child care services at year t (p_{ijt})[107,108]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	0.38 (0.37 - 0.39) [0.36 - 0.39]	0.35 (0.34 - 0.35) [0.34 - 0.36]	0.73 (0.73 - 0.73) [0.73 - 0.74]	0.43 (0.42 - 0.43) [0.42 - 0.43]	0.13 (0.13 - 0.14) [0.12 - 0.15]	NA
Living with grandparents	0.27 (0.26 - 0.27) [0.26 - 0.28]	0.12 (0.12 - 0.13) [0.12 - 0.13]	0.52 (0.52 - 0.53) [0.52 - 0.53]	0.21 (0.21 - 0.21) [0.21 - 0.22]	0.04 (0.04 - 0.04) [0.04 - 0.04]	0.07 (0.07 - 0.08) [0.06 - 0.08]
Living with domestic helpers	0.11 (0.11 - 0.11) [0.10 - 0.12]	0.09 (0.08 - 0.09) [0.08 - 0.10]	0.41 (0.41 - 0.42) [0.41 - 0.42]	0.19 (0.19 - 0.19) [0.18 - 0.20]	0.19* (0.19 - 0.19) [0.18 - 0.20]	0.07* (0.07 - 0.08) [0.06 - 0.08]
Living with grandparents and domestic helpers	0.17 (0.16 - 0.17) [0.15 - 0.18]	0.17* (0.16 - 0.17) [0.15 - 0.18]	0.23 (0.22 - 0.23) [0.21 - 0.24]	0.07 (0.07 - 0.07) [0.07 - 0.08]	0.07* (0.07 - 0.07) [0.07 - 0.08]	0.07* (0.07 - 0.08) [0.06 - 0.08]
Living with non-grandparents and non-domestic helpers	0.75* (0.74 - 0.76) [0.73 - 0.77]	0.75[#] (0.74 - 0.76) [0.73 - 0.77]	0.93 (0.93 - 0.94) [0.93 - 0.94]	0.75 (0.74 - 0.76) [0.73 - 0.77]	0.75* (0.74 - 0.76) [0.73 - 0.77]	0.07* (0.07 - 0.08) [0.06 - 0.08]

[#] Figures are derived based on Logic 1.

* Figures are derived based on Logic 2.

[107] All figures are rounded to 2 decimal places and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

[108] The magnitude of some figures is too small and may not be displayed accurately due to the rounding issue.

Table 9.19 Expected proportion of children population aged under 6 and in household combination j using child care services at year t (p_{ijt})[109,110]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	0.33 (0.32 - 0.33) [0.32 - 0.34]	0.35 (0.34 - 0.35) [0.34 - 0.36]	0.74 (0.74 - 0.74) [0.74 - 0.74]	0.50 (0.49 - 0.50) [0.49 - 0.50]	0.20 (0.20 - 0.21) [0.19 - 0.21]	NA
Living with grandparents	0.21 (0.21 - 0.22) [0.20 - 0.22]	0.18 (0.17 - 0.18) [0.17 - 0.18]	0.59 (0.59 - 0.59) [0.58 - 0.60]	0.31 (0.31 - 0.31) [0.30 - 0.31]	0.09 (0.09 - 0.09) [0.09 - 0.10]	0.26 (0.26 - 0.27) [0.25 - 0.28]
Living with domestic helpers	0.17 (0.17 - 0.18) [0.16 - 0.18]	0.17 (0.16 - 0.17) [0.16 - 0.18]	0.47 (0.47 - 0.47) [0.47 - 0.48]	0.28 (0.27 - 0.28) [0.27 - 0.28]	0.28* (0.27 - 0.28) [0.27 - 0.28]	0.26* (0.26 - 0.27) [0.25 - 0.28]
Living with grandparents and domestic helpers	0.19 (0.18 - 0.19) [0.18 - 0.20]	0.19* (0.18 - 0.19) [0.18 - 0.20]	0.32 (0.31 - 0.32) [0.30 - 0.33]	0.21 (0.21 - 0.21) [0.20 - 0.22]	0.21* (0.21 - 0.21) [0.20 - 0.22]	0.26* (0.26 - 0.27) [0.25 - 0.28]
Living with non-grandparents and non-domestic helpers	0.75* (0.74 - 0.76) [0.73 - 0.77]	0.75 (0.74 - 0.76) [0.73 - 0.77]	0.92 (0.92 - 0.92) [0.91 - 0.93]	0.75 (0.74 - 0.76) [0.73 - 0.76]	0.75* (0.74 - 0.76) [0.73 - 0.76]	0.26* (0.26 - 0.27) [0.25 - 0.28]

*Figures are derived based on Logic 2.

[109] All figures are rounded to 2 decimal places and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.
[110] The magnitude of some figures is too small and may not be displayed accurately due to the rounding issue.

9.3 Results on demand estimation

By using the components above and formula stated in Appendix 8, the demand for child care services for children population aged under 2, under 3 and under 6 are summarised in Table 9.20 to Table 9.22 below. While the projected demand and the relative planning ratio in the year of 2016, 2021, 2026, and 2031 are summarised in Table 9.23 and Table 9.24.

Table 9.20 Expected demand of child care services utilisation for children aged under 2 by household combination in the year of 2016[111]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	526 (514 - 539) [502 - 551]	992 (964 – 1 020) [937 – 1 048]	8 274 (7 461 – 9 001) [6 582 – 9 629]	3 847 (439 – 14 023) [42 – 18 635]	284 (273 - 295) [262 - 307]	NA
Living with grandparents	466 (454 - 479) [441 - 493]	136 (129 - 143) [122 - 150]	3 379 (3 344 – 3 414) [3 309 – 3 449]	681 (154 – 2 476) [33 – 5 604]	33 (31 - 34) [30 - 36]	97 (90 - 105) [83 - 114]
Living with domestic helpers	28 (26 - 29) [25 - 30]	5 (4 - 5) [4 - 6]	6 269 (61 82 – 6 357) [6 095 – 6 445]	586 (571 - 601) [556 - 617]	25 (24 - 25) [23 - 26]	3 (3 - 3) [2 - 3]
Living with grandparents and domestic helpers	37 (35 - 38) [34 - 40]	47 (45 - 49) [43 - 51]	29 (0 – 3 323) [0 – 3 340]	52 (49 - 55) [46 - 59]	8 (7 - 8) [7 - 9]	32 (29 - 34) [27 - 37]
Living with non-grandparents and non-domestic helpers	222 (220 - 225) [217 - 228]	324 (320 - 328) [315 - 332]	4 636 (4 528 – 4 740) [4 415 – 4 841]	1 596 (1 521 – 1 672) [1 447 – 1 751]	98 (94 - 103) [89 - 108]	26 (24 - 28) [22 - 30]

[111] All figures are rounded to nearest integer and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

Table 9.21 Expected demand of child care services utilisation for children aged under 3 by household combination in the year of 2016[112]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	785 (770 - 800) [755 - 815]	1743 (1 714 – 1 772) [1 685 – 1 802]	13 775 (13 734 – 13 816) [13 692 – 13 857]	12 535 (12 459 – 12 611) [12 382 – 12 688]	418 (402 - 435) [386 - 452]	NA
Living with grandparents	848 (830 - 866) [812 - 884]	693 (672 - 715) [652 - 737]	5107 (5 070 – 5 145) [5 032 – 5 182]	2 517 (2 486 – 2 548) [2 455 – 2 580]	51 (49 - 54) [47 - 57]	141 (133 - 150) [125 - 160]
Living with domestic helpers	75 (73 - 78) [71 - 80]	88 (84 - 92) [81 - 95]	13 539 (13 432 – 13 647) [13 324 – 13 756]	2 208 (2 175 – 2 242) [2 142 – 2 276]	95 (94 - 97) [92 - 98]	6 (5 - 6) [5 - 7]
Living with grandparents and domestic helpers	84 (81 - 87) [77 - 91]	74 (71 - 77) [68 - 80]	1 139 (1 106 – 1 173) [1 074 – 1 207]	130 (125 - 135) [120 - 141]	13 (12 - 13) [12 - 14]	45 (42 - 47) [39 - 50]
Living with non-grandparents and non-domestic helpers	322 (318 - 326) [313 - 330]	492 (486 - 498) [479 - 504]	7 071 (7 041 – 7 099) [7 010 – 7 125]	4 933 (4 867 – 4 997) [4 799 – 5 060]	292 (288 - 295) [284 - 299]	86 (81 - 92) [76 - 98]

[112] All figures are rounded to nearest integer and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

Table 9.22 Expected demand of child care services utilisation for children aged under 6 by household combination in the year of 2016[113]

	Single-parent household		Two-parent household			No-parent household
	Work	Non-work	Both work	One-work	Non-work	
Living with parents only	1 796 (1 766 – 1 826) [1 737 – 1 856]	3 904 (3 846 – 3 962) [3 789 – 40 20]	31 584 (31 510 – 31 658) [31 436 – 31 732]	32 213 (32 077 – 32 350) [31 940 – 32 487]	1 395 (1 360 – 1 431) [1 325 – 1 468]	NA
Living with grandparents	1 331 (1 305 – 1 357) [1 279 – 1 384]	1 434 (1 400 – 1 468) [1 367 – 1 504]	10 711 (10 658 – 10 764) [10 604 – 10 817]	7 196 (7 138 – 7 254) [7 079 – 7 313]	221 (214 - 228) [207 - 235]	1 248 (1 216 – 1 280) [1 185 – 1 313]
Living with domestic helpers	404 (395 - 413) [386 - 423]	338 (329 - 347) [320 - 356]	31 965 (31 788 – 32 143) [31 610 – 32 321]	7 113 (7 042 – 7 184) [6 971 – 7 256]	441 (437 - 446) [432 - 450]	42 (41 - 43) [40 - 44]
Living with grandparents and domestic helpers	192 (187 - 198) [182 - 204]	125 (121 - 128) [118 - 132]	3 423 (3 363 – 3 484) [3 303 – 3 546]	793 (777 - 811) [760 - 828]	80 (78 - 81) [76 - 83]	327 (318 - 335) [310 - 344]
Living with non-grandparents and non-domestic helpers	860 (849 - 871) [837 - 881]	1 100 (1 086 – 1 114) [1 071 – 1 128]	10 671 (10 635 – 10 706) [10 597 – 10 740]	10 946 (10 833 – 11 057) [10 717 – 11 166]	641 (634 - 648) [628 - 654]	1 253 (1 221 – 1 286) [1 190 – 1 319]

[113] All figures are rounded to nearest integer and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

Table 9.23 Estimated and projected demand for the child care services by age group in the year of 2016, 2021, 2026, and 2031[114]

	Aged under 2	Aged under 3	Aged under 6
2016	32 736 (27 533 – 49 153) [25 711 – 57 966]	69 304 (68 697 – 69 912) [68 089 – 70 524]	163 747 (162 622 – 164 872) [161 495 – 166 004]
2021	32 818 (27 602 – 49 276) [25 775 – 58 111]	69 478 (68 869 – 70 087) [68 260 – 70 701]	167 530 (166 379 – 168 681) [165 226 – 169 840]
2026	30 874 (25 967 – 46 357) [24 248 – 54 668]	65 361 (64 789 – 65 935) [64 216 – 66 512]	159 390 (158 295 – 160 485) [157 198 – 161 587]
2031	27 711 (23 307 – 41 609) [21 765 – 49 069]	58 667 (58 153 – 59 181) [57 638 – 59 699]	147 094 (146 084 – 148 105) [145 071 – 149 122]

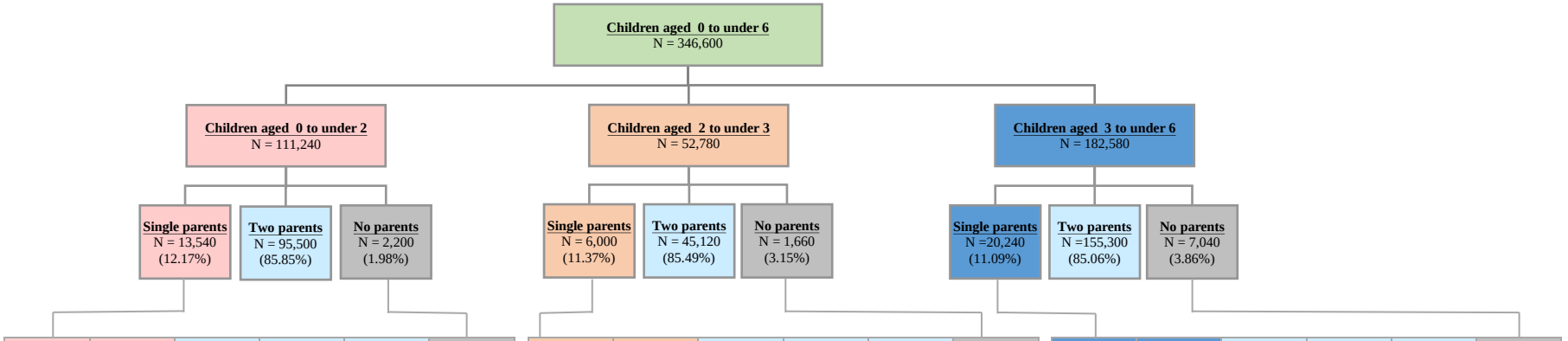
Table 9.24 Planning ratio for child care services by age group in the year of 2016, 2021, 2026, and 2031[115]

	Aged under 2	Aged under 3	Aged under 6
2016	89 (75 - 134) [116 - 175]	189 (187 - 191) [209 - 287]	446 (443 - 449) [533 - 652]
2021	86 (73 - 130) [112 - 169]	183 (181 - 184) [202 - 277]	440 (437 - 443) [526 - 643]
2026	79 (66 - 118) [102 - 155]	167 (166 - 169) [184 - 254]	407 (405 - 410) [487 - 595]
2031	69 (58 - 104) [90 - 136]	147 (145 - 148) [162 - 223]	368 (365 - 370) [440 - 537]

[114] All figures are rounded to nearest integer and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

[115] All figures are rounded to nearest integer and figures in () are 5% confidence intervals while figures in [] are 10% confidence intervals.

Appendix 10 Number of children in 2016 stratified by the parents' working status and family types



	Working N=4,740 (4.26%)	Not working N=8,800 (7.91%)	Both working N=50,880 (45.74%)	One working N=40,900 (36.77%)	Both not working N=3,720 (3.34%)	No parents N=2,200 (1.98%)	Working N=2,100 (3.98%)	Not working N=3,900 (7.39%)	Both working N=22,980 (43.54%)	One working N=20,360 (38.58%)	Both not working N=1,780 (3.37%)	No parents N=1,660 (3.15%)	Working N=9,480 (5.19%)	Not working N=10,760 (5.90%)	Both working N=77,380 (42.38%)	One working N=71,280 (39.04%)	Both not working N=6,640 (3.64%)	No parents N=7,040 (3.86%)
Living with parents only	N=1,442 (1.29%)	N=3,306 (2.97%)	N=12,002 (10.79%)	N=19,282 (17.33%)	N=2,113 (1.90%)	---	N=627 (1.19%)	N=1,695 (3.21%)	N=6,845 (12.97%)	N=10,039 (19.02%)	N=997 (1.89%)	---	N=3,439 (1.88%)	N=6,185 (3.38%)	N=23,907 (13.09%)	N=35,665 (19.53%)	N=3,773 (2.06%)	---
Living with grandparents	N=2,380 (2.14%)	N=4,200 (3.78%)	N=7,080 (6.36%)	N=8,440 (7.59%)	N=840 (0.76%)	N=1,360 (1.22%)	N=780 (1.48%)	N=1,400 (2.65%)	N=2,660 (5.04%)	N=3,460 (6.56%)	N=480 (0.91%)	N=600 (1.14%)	N=3,140 (1.72%)	N=2,540 (1.39%)	N=8,440 (4.62%)	N=11,440 (6.27%)	N=1,100 (0.60%)	N=2,780 (1.52%)
Living with domestic helpers	N=400 (0.36%)	N=580 (0.52%)	N=22,040 (19.81%)	N=7,640 (6.87%)	N=320 (0.29%)	N=40 (0.04%)	N=280 (0.53%)	N=420 (0.80%)	N=10,660 (20.20%)	N=3,960 (7.50%)	N=180 (0.34%)	N=40 (0.08%)	N=1,660 (0.91%)	N=1,000 (0.55%)	N=35,160 (19.26%)	N=14,200 (7.78%)	N=1,100 (0.60%)	N=80 (0.04%)
Living with grandparents and domestic helpers	N=220 (0.20%)	N=280 (0.25%)	N=3,340 (3.00%)	N=1,200 (1.08%)	N=180 (0.16%)	N=440 (0.40%)	N=280 (0.53%)	N=160 (0.30%)	N=1,660 (3.15%)	N=640 (1.21%)	N=0 (0.00%)	N=180 (0.34%)	N=520 (0.28%)	N=220 (0.12%)	N=5,860 (3.21%)	N=1,940 (1.06%)	N=200 (0.11%)	N=620 (0.34%)
Not living with grandparents and domestic helpers	N=298 (0.27%)	N=434 (0.39%)	N=6,418 (5.77%)	N=4,338 (3.90%)	N=267 (0.24%)	N=360 (0.32%)	N=133 (0.25%)	N=225 (0.43%)	N=1,155 (2.19%)	N=2,261 (4.28%)	N=123 (0.23%)	N=840 (1.59%)	N=721 (0.40%)	N=815 (0.45%)	N=4,013 (2.20%)	N=8,035 (4.40%)	N=467 (0.26%)	N=3,560 (1.95%)

Figure 10.1 Number and percentage of children stratified by parents' working status and family types[116]

[116] Source: 2016 census data from Statistics and Census Department.

Appendix 11 Focus Group interview methodology and data analyses

Qualitative methodology

To understand the experiences of the stakeholders and compile their opinions on the service provision of child care services, design experience-informed recommendations on the service modes and the financing modes for child care services. Qualitative data were collected from different stakeholders through one-on-one discussions, focus group interviews as well as from the general public. These qualitative data would also be used to explain some of the findings generated through quantitative research methods, e.g. questionnaires, census data and other sources.

Sampling for interviews and focus group

Four groups of stakeholders (N=103) were recruited through different ways. They are listed as below:

i. Service providers (staff at management level): management level staff of child care services, such as principals, supervisors of child care services;
ii. Service providers (staff at front-line level): the front-line staff involved in the daily operation, such as child care workers[117] and child carers who provide child care services at NSCCP or MHCCCs;
iii. Service Users: parents and carers have used and/or are using child care services subvented by SWD; and
iv. Non-service users: parents and carers who have never used and/or are not currently using child care services subvented by SWD.

Recruitment

Service providers (Management level) (Table 11.1)
A total of 53 respondents from management level working in standalone CCCs, KG-cum-CCCs, MHCCCs, NSCCP, women's groups and the Hong Kong Council of Social Service registered and 44 of them actually showed up in the focus group interviews.

Service providers (Front-line level) (Table 11.1)
A total of 36 respondents of front-line staff e.g. child care workers, social workers or home-based child carers, working in standalone CCCs, KG-cum-CCCs, MHCCCs, NSCCP and women's groups, registered to focus group interviews, and 27 of them actually showed up and participated in the focus group interviews.

Service users (Table 11.2)
A total of 24 service users participated in the focus group interviews. These interviewees were randomly selected among those respondents of the online questionnaires who indicated their interest to participate in the focus group interviews. Stratified Random Sampling was employed

[117] The functional title of those interviewee is Teacher.

to select the potential interviewees. The demographic characteristics and socio-economics factors such as districts, monthly household income, child care services the interviewees were using, number of children, etc were considered for stratification.

Non-service users (Table 11.2)
A total of 8 participants of this focus group were also recruited from the online questionnaires for the non-service users.

Core Questions for the focus group

The focus group interviews were conducted in semi-structural format. Different sets of questions for different types of stakeholders were designed by the research team. Those questions covered the following nine areas:

i. the service objectives, service contents, target user groups and planning parameters of aided standalone CCCs which are under the planning and regulatory control of SWD, including a review of the planning for centre-based day child care services which are substantially provided in KG-cum-CCCs;
ii. the relationship of CCC service, including standalone CCCs and KG-cum-CCCs, with kindergarten education;
iii. the manpower planning and training for child care staff, including child care workers and child care supervisors;
iv. the appropriate planning mechanism for centre-based day child care services;
v. the functions of NSCCP and MHCCCs and proposed changes to enhance the service quality and optimise the use of public resources;
vi. the appropriate service model(s)/mode(s) and financing mode(s) for different types of day child care services;
vii. the projection of the demand and supply of day child care services including government-subsidised and non-government-subsidised services, as well as the ancillary services, i.e. EHS and OCCS in the territory;
viii. the need for re-engineering and integration of different types of day child care services; and
ix. the role of Government vis-à-vis the private market in the provision of day child care services

The procedures of one-on-one and focus group interviews

The investigators and two group interviewers led the semi-structured focus group interviews. The interviewers hold a Master's Degree in Public Health and a Master's Degree in Social work, respectively and they are experienced in facilitating focus group discussion. Each of the group sessions was led by an investigator of the study, i.e. by Professor Paul Yip, Dr. Frances Law and Dr. Chee Hon Chan to ensure the quality of the interviews.

Ethics approvals were sought from The University of Hong Kong (Reference Number: EA1706015) and The Department of Health (Reference Number: LM 287/2017). The interviews and focus groups lasted for about 60-90 minutes. Written consent was obtained before conducting each focus group and interviews. All interviewees were clearly informed about the research objectives, purposes of the data collection and understood that the interviews were audio-recorded (audio-recording was not consented for all one-on-one interviews) for research purposes. Confidentiality of the interviewees' personal identity was also iterated. The venue for all focus

groups was the meeting rooms in the Centennial Campus, The University of Hong Kong. The audio records and transcripts were stored in The Hong Kong Jockey Club Centre for Suicide Research and Prevention (“CSRP”) system and can only be accessed by authorized researchers.

For the participants of service users’ focus groups and non-service users’ focus groups, HK$200 vouchers were provided when they completed the focus group interviews.

Data analyses on focus group

Verbatim transcripts were typed by trained assistants. The research team further checked the transcripts to ensure their quality and accuracy.

Thematic analysis approach was then used to conduct the data analyses. Based on the nine areas of concern, meaningful quotes were highlighted and extracted as the first level coding by the trained research staff. Those concerns include the participants' beliefs, values, perceptions, comments and suggestions in the 9 areas stated previously.

Codes were then categorised into one or more of the nine areas by two research members. Another two members then identified commonalities and differences among the codes under each of those areas and assigned them with themes and sub-themes. An inter-rater reliability check for data coding was later conducted by a member from each of the two teams.

Table 11. 1 Demographic data summary of service providers—management level & front-line level

-	Service Providers (management level) Number of focus groups conducted: 6			Service Providers (front-line level) Number of focus groups conducted: 3				Total
-	NGO Director, Principal and Service Director	Supervisor, Manager, Officer and Service coordinator	Social Worker, Advocacy Officer	Home-based Child Carers under NSCCP	Child Care Worker	Social Worker	Others (Officer, Centre-in-charge)	
CCCs (included EHS & OCCS)	7	6	0	0	12	0	3	28
KG-cum-CCCs (included EHS & OCCS)	12	3	0	0	1	0	2	18
MHCCCs	1	0	1	0	0	0	1	3
NSCCP	0	7	1	2	1	5	0	16
Others (e.g. women's group, HKCSS)	4	1	1	0	0	0	0	6
Total	24	17	3	2	14	5	6	**71**

Table 11. 2 Demographic data summary of service users and non-service users

	Services using	Gender (Male vs. Female)	Number of Children			Total
			1	2	3	
Service users Number of focus groups conducted: 3	CCCs (included EHS & OCCS)	8:12	12	7	1	20
	KG-cum-CCCs (included EHS & OCCS)	0:2	1	1	0	2
	MHCCCs	0:0	0	0	0	0
	NSCCP	1:1	1	1	0	2
Non-service users Number of focus groups conducted: 2	N/A	0:8	5	3	0	8
Total		9:23	19	12	1	**32**

Appendix 12 Views from Government representatives

Objective and Procedure of Data Collection

The one-on-one interviews with Government representatives were conducted with the aim to understand their duties and how they perceive child care services in Hong Kong. A total of three representatives were interviewed and they were from relevant bureau/department. The Project Leader of the consultant team attended all the one-on-one interviews at the Government representative's offices.

Some relevant views are set out below.

Rationale of Child Care Services: The current policy in place has cultural context which is care-oriented. If the policy is changed to "education and care", the Government may need to have a clear definition of "child development" to enable the change and be consistent with the objectives of child care services.

Expenditure of Child Care Services*:* The increase in public expenditure on child care services is subject to the policy objectives and service positioning of child care services.

Planning of Child Care Services: Before the harmonisation of pre-primary services in September 2005, the planning standard for the provision of day nurseries for children aged 2 to under 6 was 100 aided places for every 20 000 of the general population.[118] The planning ratio for day nurseries became obsolete after the harmonisation of pre-primary services and was removed from the Hong Kong Planning Standards and Guidelines. To increase the provision of CCC places, the Government tried to identify suitable places/premises in the community for setting up aided standalone CCCs. Nevertheless, despite the claimed shortage in CCC places for children aged under 3, there is lack of private CCCs as seen in the market.

Monitoring and Compliance: After the harmonisation of pre-primary services in September 2005, the former day nurseries were registered under the CCSO and the EO to operate both CCCs and KGs serving children aged 2 to under 6 which are called KG-cum-CCCs since then. Though it is clear that CCCs, primarily for children under 3, are regulated by SWD while KGs for children aged 3 to 6 are under EDB's regulatory control, some frontline workers still have confusion about the one-stop service provided by JOKC. Meanwhile, service providers of KG-cum-CCCs have the autonomy to distribute the number of KG and CCC places, which might result in the increase of KG places at the expense of CCC places.

The Position of MHCCCs and NSCCP: MHCCCs provide child care service for promoting mutual help at neighbourhood level, and the child carers are volunteers. Of a similar nature, NSCCP aims to provide needy parents with a flexible form of child care service at the neighbourhood level and, at the same time, to foster mutual help and care in the community. Some parents might have the impression that MHCCCs are not as popular as they were in the past, as demonstrated in the low utilization rates of MHCCCs upon the implementation of NSCCP.

[118] White Paper : Social Welfare into the 1990s and Beyond, March 1991.

Appendix 13 Summary and analyses of the comments from the general public by deputations and emails

Introduction

The consultant team reviewed the 17 papers prepared by deputations which were submitted to "LegCo Subcommittee on Children's Rights' meeting" on January 13, 2018. In addition, the consultant team also reviewed the written opinions from the general public which were received via email. These opinions are summarised as follows:

About the position and rationales of child care service

- Some deputations advocated the Government to invest more resources on child care services to support families in need.
- The function/training programme of child care centres should be enhanced, such as providing parenting/child care skills training to parents.
- Revisit and redefine the positioning of child care services.
- Review and update the "Child Care Services Ordinance" and the "Child Care Services Regulations" in order to cater the current needs of Hong Kong development and child development.
- Formulate policy of child care and education with a clear planning system.
- Reactivate the planning of child care services and provide more options of child care services with affordable cost.
- Child Care Centres should play a key role in child care services with support from flexible/volunteered-based child care services
- Enhance family-friendly policy, for example, extending the maternity leave from 10 weeks[119] to 14 weeks, paternity leave from 3 days to 7 days, and providing incentives for employers to create more jobs on part-time based so that the parents can take care of children even when they are engaged by work.
- Child care services which focus on developing children's physical, self-care ability and creativity should be enhanced.

Enhance service availability

- Increase the provision of child care services, including Occasional Child Care Service and full-day child care services for children of age 0 to under 3.
- One deputation advised to increase the number of child care places by 4,900 to meet the service demand.
- Enhance the promotion of child care services and make the information to be more accessible.

[119] Per Policy Address on October 10, 2018, maternity leave is revised from 10 to 14 weeks among civil servants with immediate effect. For the general public, the maternity leave at 14 weeks bill will be tabled in late 2019 and passed before July 2020 (SCMP 2018).

Enhance service quality

- For children aged 2 to under 3 (nursery class), a respondent suggested adjusting the qualified staff-to-child ratio from 1:14 to 1:11.
- Review and adjust the staff-to-child ratio as follows:
    - Aged 0 to under 1 at 1:4
    - Aged 1 to under 2 at 1:6
    - Aged 2 to under 3 at 1:8
- Increase the ratio of supervisor to staff ratio to 1:5 in order to enhance the quality.
- For planning and monitoring, early education and care for children aged from 0 to under 6 should be considered as a whole.
- Enhance child protection policy and training to child care staff/workers.
- Renovate the child care centres which are dilapidated.
- For the sake of hygiene, child care centres for children aged 0 to 2 should not accommodate more than 50 children.

Enhance affordability

- Increase the subsidy level to low income families with children having caring needs so that they are able to benefit the service
- A deputation suggested that the service fee of child care services should not be above 10% of the Median Monthly Domestic Household Income.

Enhance community support

- Improve the Neighbourhood Support Child Care Project.
- Sexual Conviction Record Check is needed for recruiting volunteers and staff of child care services.
- Volunteer-based child care services should be enhanced in order to provide affordable and flexible child care service.
- Enhance the monitoring of the Neighbourhood Support Child Care Project.
- Increase the incentive payment for home-based child carers of Neighbourhood Support Child Care Project to the level of $25/hour so as to attract the involvement of the volunteers.

Foreign Domestic helper

- Provide training to foreign domestic helpers to enhance their child care skills.
- Develop a “licensing system” to ensure foreign domestic helpers’ ability in child care.

Expend the child-care service to the children with special needs

- Provide service to children with special needs.
- Employ more Special Educational Needs Coordinator (SENCO) in child care services.
- Extend the Integrated Programme in Kindergarten-cum-Child Care Centre

For management

- Formulate a more flexible financing system so that the child care management can use the resources more flexibly.

Appendix 14 Analyses of the willingness-to-pay for child care services and its implication on the financing mode

Introduction

In Hong Kong, child care services, particularly aided standalone CCCs and CCCs attached to KGs, are subsidised by the Government. In accordance with CCSO, the inclusive monthly fee[120] (regarded as "service fee" in the following paragraphs) of CCCs should be approved by the Director of Social Welfare. In considering an application for service fee adjustment submitted by the service provider of a CCC, regardless of standalone or attached to KGs, the Government will consider the estimated budget of the concerned CCC in the coming school year. For an aided standalone CCC, any fee increase should be cost justified, that is, attaining break-even level after taking into account accumulated surplus/deficit brought forward from previous years. (Please also refer to Chapter 3 for the current financing mode of child care services).

It is known that the services of standalone CCCs and CCCs attached to KGs have been changing over the years according to the information collected, it is known that increasingly more education and child development activities (for example toys in centres are chosen with elements in education and development) have been included in the services. The changes from "care-oriented" model of child care services to more inclusive of child developmental elements model is noticeable to attract more middle-class users to use these aided child care services. Their affordability may well be different from the previous expected users. Regarding the service fees of OCCS, EHS, MHCCCs and NSCCP, there were no negative findings from both the focus group interviews and questionnaire, comments were generally about more places and longer hours (for OCCS and EHS) and preference for professionalism (MHCCCs and NSCCP). Therefore, the focus of this chapter is the respondents' willingness to pay for CCC service.

Given the likely changes of the demographics of the demand side (user population) due to the change in nature (e.g. changes in service quality such as the reflection from improved staff-to-child ratio) in child care services, it was expected that the willingness to pay for child care services of user groups have also changed. To allow the Government to make a more up-to-date assessment on service fees, this study conducted an exploratory exercise to identify the "expected" amount of service fees (willingness-to-pay) that service users as a collective group are willing to pay. This information will be useful for the deliberation for the financing mode of CCCs. It is hypothesised that:

H1: It is expected that households with high socio-economic status ("SES") or background (e.g. monthly household income) are more willing to pay more for CCC service than the low-SES group.

[120] As stipulated in R. 45A of the CCSR, "inclusive monthly fee" means the total sum of money charged per month in respect of the care and supervision of a child in a centre.

Aim of the analyses

The aim of this study is to examine how much the existing service users are willing to pay for CCC service.

Analytical approach

Based on the data collected from service users of standalone CCCs (1 056 service users, 40% from aided standalone CCCs and 60% from users of aided CCCs attached to KGs), the expected amount of service fees they were willing to pay was examined. Assuming the quality of service remained unchanged, the questionnaires first asked the respondents whether they were willing to pay more or less for the existing CCC service. This helps to estimate the proportion of respondents satisfied with the existing service. They were further asked if they were willing to pay more (or less), how much more (or less) would they be willing to pay (or not willing to pay):

- HK$500 - HK$1,499;
- HK$1,500 - HK$2,499;
- HK$2,500 - HK$3,499;
- HK$3,500 - HK$4,999;
- HK$5,000;
- HK$5,000 - HK$7,499;
- HK$7,500 - HK$9,999;
- HK$10,000 or above.

This question allows estimation of the average mean of willingness to pay for the service among this group. In addition, whether the respondents' monthly household income level affected their willingness to pay for CCC service was also examined.

Descriptive statistics were used to examine the proportion of parents satisfied with the existing level of service fee. The mean of willingness-to-pay was calculated by averaging the available choices on service fee from the questionnaire. The data were then further broken down into different household income groups to examine the effect of household income on willingness to pay. Table 14.1 outlines the distribution of monthly household income of the respondents.

Table 14. 1 The household income of the respondents

Household income, HK$	N (existing service users)	N (non-existing service users)
$0 - $18,999	344 (26.1%)	130 (18.9%)
$19,000 - $39,999	509 (38.6%)	245 (35.6%)
$40,000 - $79,999	358 (27.1%)	225 (32.7%)
>= $80,000	108 (8.2%)	88 (12.8%)

Results

Comparison of the respondents' willingness-to-pay on CCC service to the average service fees

The study set the existing average service fee, i.e. HK$5,000 as a cut-off to examine whether households with higher income would have a higher affordability on CCC service. Tables 14.2 and 14.3 display the results from standalone CCCs and CCCs attached to KGs. It was observed that households with higher income were more likely to afford the existing average service fee. Although the respondents from CCCs attached to KGs has a lower percentage on affordability than the respondents from standalone CCCs, analysis on both groups of respondents obtained a similar pattern of result. The results thus support the notion that the affordability of service users is subject to their household income.

Table 14. 2 Percentage of the respondents' willingness to pay for the average service fees on standalone CCCs by their monthly household income

Household income, HK$	Can afford more than $5,000 (the average service fee)
$0 - $18,999	54.5%
$19,000 - $39,999	56.3%
$40,000 - $79,999	78.8%
>= $80,000	94.4%

Table 14. 3 Percentage of respondents' willingness to pay for the average service fees on CCCs attached to KGs by their monthly household income

Household income, HK$	Can afford more than $5,000 (the average service fee)
$0 - $18,999	9.2%
$19,000 - $39,999	21.3%
$40,000 - $79,999	36.2%
>= $80,000	56.5%

Comparison of the users' willingness-to-pay on CCC service to the users' current service fees (within-sample comparison)

Having compared the differences in affordability, then comparison was made as to how much the service users were willing to pay for CCC service. Their willingness to pay for more than they are paying now was also explored. If the answer was affirmative, the consultant team categorised them into "willing to pay more than they are paying now". Conversely, they were categorised as "not willing to pay more than they are paying now".

Table 14.4 illustrates respondents' willingness to pay (in percentage) more than they are paying now at standalone CCCs or CCCs attached to KGs. The result revealed that there are 60.6% of respondents from standalone CCCs while 66.2% of respondents from CCCs attached to KGs are satisfied with the existing service fee, and even show willingness to pay more for the service.

Table 14. 4 Percentage of respondents' willingness to pay more than the existing service fee of standalone CCCs and CCCs attached to KGs

	Respondents from CCCs (n = 398)		Respondents from CCCs attached to KGs(n = 536)	
	Counts (n)	Percentages (%)	Counts (n)	Percentages (%)
Willing to pay	241	60.6%	355	66.2%
Not willing to pay	157	39.4%	181	33.8%
Total	398	100.0%	536	100.0%

To examine whether the household income would affect the willingness to pay, the respondents were broken down into four groups with different household incomes (Table 14.5). The findings revealed a trend that when household income increased, their willingness to pay for more for services of standalone CCCs or CCCs attached to KGs also increased. This suggests that household with higher income tends to willing to pay more for CCC service. This pattern of results (Table 14.5) provides a general idea that the acceptable service fee for CCC service is not a universal concept; rather, it is affected by the household income. Parents with higher household income are more willingness to pay more for the service. However, this cannot tell whether household income would affect the amount of spending on child care services, that is to say, how much more the parents would spend on CCC service.

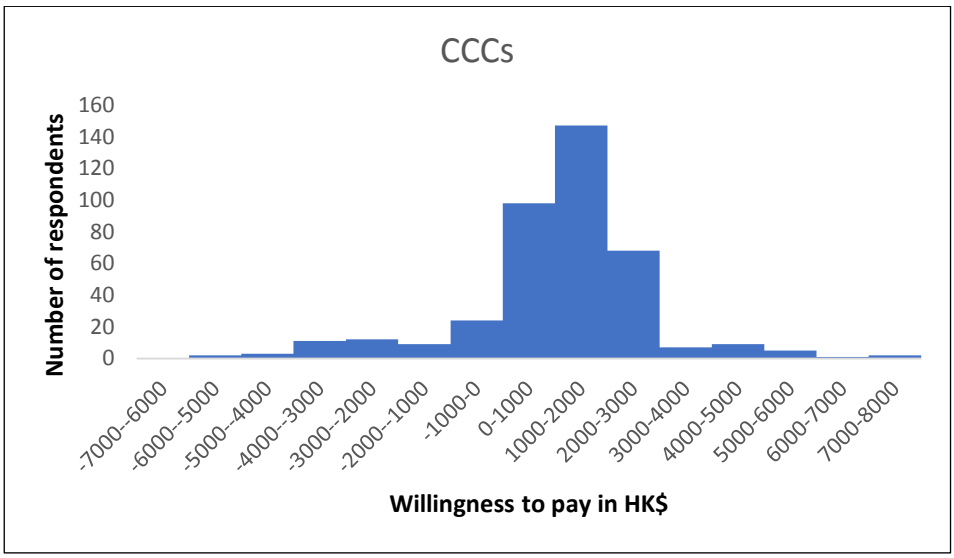
Table 14. 5 Respondents' willingness to pay (in percentage) by household income (HK$)

	Service users from CCCs (n=394)		**Service users from CCCs attached to KGs (n= 530)**	
Household income, HK$	N (income group)	% of willing to pay more	N (income group)	% of willing to pay more
$0 - 18,999	49	49.0%	119	57.1%
$19,000 – 39,999	147	50.3%	206	63.1%
$40,000 – 79,999	147	64.6%	161	72.0%
>$80,000	51	88.2%	44	84.1%

Overall, it is observed that the results of service average and the within-sample average are very similar, particularly at the increasing gradient of willingness to pay more for CCC service by the respondents' monthly household income.

Distribution of respondents' willingness to pay for services at standalone CCCs and CCCs attached to KGs

To further investigate into the willingness to pay, descriptive statistics illustrate the average mean and the distribution of willingness to pay for standalone CCCs and CCCs attached to KGs.



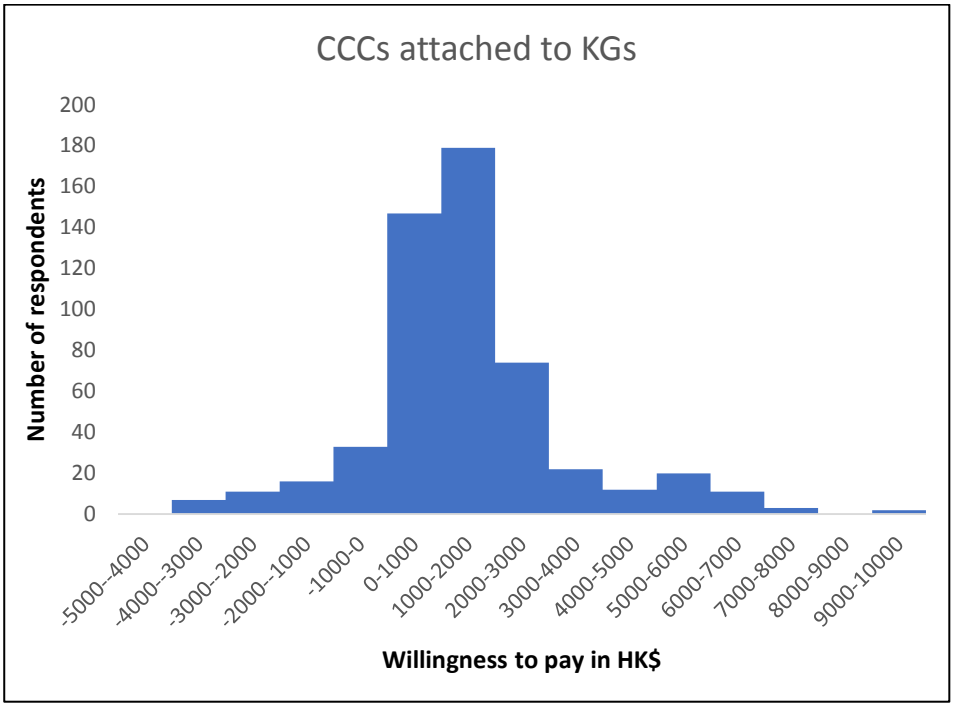


Figure 14. 1 Respondents' willingness to pay for services at standalone CCCs and CCCs attached to KGs in HK$

Figure 14.1 illustrates the difference between willingness to pay and the actual spending on CCC service. The mean difference between willingness to pay and the actual spending is HK$258 in standalone CCCs; HK$590 in CCCs attached to KGs. Both standalone CCCs and CCCs attached to KGs obtained a positive value, indicating that there is willingness to pay higher than the current price. However, the result should be interpreted with caution. It is observed that there is a high standard deviation in the sample.

Distribution of willingness to pay for the current service fee at standalone CCCs and CCCs attached to KGs

To further investigate into whether household income would affect the willingness to pay for the current service fee at standalone CCCs and CCCs attached to KGs, households were broken down into four income groups (Table 14.6). The aim of breaking down the household income groups was to explore into whether this is a linear trend of the willingness to pay for the current service fee at standalone CCCs and CCCs attached to KGs in relation to the respondents' monthly household income. For standalone CCCs, among all four household income groups, only the group HK$0- HK$18,999 obtained a negative mean difference. The negative mean difference means that the group wanted to spend less than what they were paying. The other three groups all obtained a positive value, indicating that they were willing to pay more than the existing service fee. For CCCs attached to KGs, all four income groups obtained a positive value. The pattern of results from the standalone CCCs and CCCs attached to KGs seems to imply that there is a positive gradient trend between willingness to pay and household income. There is also evidence that respondents with relatively higher monthly household income were willing to pay more than the current service fee at standalone CCCs or CCCs attached to KGs, but on the other hand, the evidence shows that those from the low income group (HK$0-HK$18,999) might create a barrier for them from using the service, as the existing service fee is higher than their "acceptable" amount.

Table 14. 6 Respondents' willingness to pay for child care services at standalone CCCs and CCCs attached to KGs by household income

	CCCs (n = 365)		CCCs attached to KGs(n = 486)	
Household income, HK$	n (%)	Mean difference (SD)	n (%)	Mean difference (SD)
$0 - 18,999	40 (11.0%)	-101 (1397)	113 (23.3%)	18 (1283)
$19,000 - 39,999	138 (37.8%)	217 (1251)	193 (39.7%)	358 (1081)
$40,000 - 79,999	138 (37.8%)	606 (920)	142 (29.2%)	524 (1316)
>$80,000	49 (13.4%)	1207 (993)	38 (7.8%)	877 (1155)

Financing mode of the other four child care services

Given the limited data collected from the questionnaire on the willingness to pay concept for the other four types of services, namely EHS, OCCS, MHCCCs and NSCCP, in this report the team did not conduct a separate analysis on the willingness to pay concept for these services.

Implications and proposal of a 3rd type of financing mode

The results raise some interesting findings. First, there is a very similar finding between the service users from standalone CCCs and CCCs attached to KGs, possibly due to the similarity in their service nature. Second, the results support the notion that there exists a gradient of "acceptable amount" of services fee for the same quality of service. From the results, low household income group were less willing to pay more for the service; whereas in contrast, those

higher household income groups were more willing to pay the existing "average" service fee, and even a higher proportion of them were seen willing to pay "more" than the existing level. What it indicates is that there may be room to increase service fees at a scale according to the level of household income and thus enabling more efficient deployment of resources, i.e. a scale with lower fee for families with lower income and higher fee for families with higher income.

Such an approach is similar to the co-payment structure exemplified in Finland, described in Chapter 2.3.1. Finland's co-payment method is based on family income where the child care subsidy is scaled. Lower income families receive the highest amount of subsidy and highest income families are excluded from the subsidies. The quantitative, statistical findings on the lower income families which are not willing to pay more are consistent with the findings from focus group interviews that some users indicated service fee to be too high and would like to see the fee be reduced from the current average of about HK$5,000/month to HK$3,000-HK$4,000/month. However, at the same time, it was also noted from parents that they showed willingness to share the responsibility with the Government to pay for the cost on child care. Other comments from the public suggested the fee to be lowered to 10% of the family income. Lowering the service fee would enhance its affordability which will be of benefit to needy families. Providing co-payment options for families who could afford the service and contribute more to the existing service level would also benefit those who are in need. This would somewhat redistribute the resources and satisfy families in need on both spectra without imposing excessive burden on the respective families.

Summary

This section analysed the gaps in the existing financing mode by way of examining the willingness of service users to pay for the service fee of standalone CCCs or CCCs attached to KGs. It helps the consultant team to explore a potential mode of better cost efficiency and sustainability. There seems to be a pattern on the willingness to pay more for the same quality of service among higher income families and less willing to pay more among lower income families. Thus applying such concept to create a subsidy system should be considered, consequently, lower income families would receive higher amount of subsidy and higher income families would receive lower amount, making CCCs more affordable and more balanced. To explore in the longer run, the converting of some non-aided centres or places to semi-aided centres or places might also provide availability and affordability to families who are in the middle income level in need of CCCs.

Appendix 15 Australia's national quality standard [121]("NQS")

NATIONAL QUALITY STANDARD		
	Concept	Descriptor
QA1		**Educational program and practice**
1.1	Program	The educational program enhances each child's learning and development.
1.1.1	Approved learning framework	Curriculum decision-making contributes to each child's learning and development outcomes in relation to their identity, connection with community, wellbeing, confidence as learners and effectiveness as communicators.
1.1.2	Child-centred	Each child's current knowledge, strengths, ideas, culture, abilities and interests are the foundation of the program.
1.1.3	Program learning opportunities	All aspects of the program, including routines, are organised in ways that maximise opportunities for each child's learning.
1.2	Practice	Educators facilitate and extend each child's learning and development.
1.2.1	Intentional teaching	Educators are deliberate, purposeful, and thoughtful in their decisions and actions.
1.2.2	Responsive teaching and scaffolding	Educators respond to children's ideas and play and extend children's learning through open-ended questions, interactions and feedback.
1.2.3	Child directed learning	Each child's agency is promoted, enabling them to make choices and decisions that influence events and their world.
1.3	Assessment and planning	Educators and co-ordinators take a planned and reflective approach to implementing the program for each child.
1.3.1	Assessment and planning cycle	Each child's learning and development is assessed or evaluated as part of an ongoing cycle of observation, analysing learning, documentation, planning, implementation and reflection.
1.3.2	Critical reflection	Critical reflection on children's learning and development, both as individuals and in groups, drives program planning and implementation.
1.3.3	Information for families	Families are informed about the program and their child's progress.
QA2		**Children's health and safety**
2.1	Health	Each child's health and physical activity is supported and promoted.
2.1.1	Wellbeing and comfort	Each child's wellbeing and comfort is provided for, including appropriate opportunities to meet each child's need for sleep, rest and relaxation.
2.1.2	Health practices and procedures	Effective illness and injury management and hygiene practices are promoted and implemented.
2.1.3	Healthy lifestyle	Healthy eating and physical activity are promoted and appropriate for each child.
2.2	Safety	Each child is protected.
2.2.1	Supervision	At all times, reasonable precautions and adequate supervision ensure children are protected from harm and hazard.
2.2.2	Incident and emergency management	Plans to effectively manage incidents and emergencies are developed in consultation with relevant authorities, practised and implemented.
2.2.3	Child protection	Management, educators and staff are aware of their roles and responsibilities to identify and respond to every child at risk of abuse or neglect.
QA3		**Physical environment**
3.1	Design	The design of the facilities is appropriate for the operation of a service.
3.1.1	Fit for purpose	Outdoor and indoor spaces, buildings, fixtures and fittings are suitable for their purpose, including supporting the access of every child.
3.1.2	Upkeep	Premises, furniture and equipment are safe, clean and well maintained.
3.2	Use	The service environment is inclusive, promotes competence and supports exploration and play-based learning.
3.2.1	Inclusive environment	Outdoor and indoor spaces are organised and adapted to support every child's participation and to engage every child in quality experiences in both built and natural environments.
3.2.2	Resources support play-based learning	Resources, materials and equipment allow for multiple uses, are sufficient in number, and enable every child to engage in play-based learning.
3.2.3	Environmentally responsible	The service cares for the environment and supports children to become environmentally responsible.

[121] Source: https://www.acecqa.gov.au/nqf/national-quality-standard

	Concept	Descriptor
QA4		**Staffing arrangements**
4.1	Staffing arrangements	Staffing arrangements enhance children's learning and development.
4.1.1	Organisation of educators	The organisation of educators across the service supports children's learning and development.
4.1.2	Continuity of staff	Every effort is made for children to experience continuity of educators at the service.
4.2	Professionalism	Management, educators and staff are collaborative, respectful and ethical.
4.2.1	Professional collaboration	Management, educators and staff work with mutual respect and collaboratively, and challenge and learn from each other, recognising each other's strengths and skills.
4.2.2	Professional standards	Professional standards guide practice, interactions and relationships.
QA5		**Relationships with children**
5.1	Relationships between educators and children	Respectful and equitable relationships are maintained with each child.
5.1.1	Positive educator to child interactions	Responsive and meaningful interactions build trusting relationships which engage and support each child to feel secure, confident and included.
5.1.2	Dignity and rights of the child	The dignity and rights of every child are maintained.
5.2	Relationships between children	Each child is supported to build and maintain sensitive and responsive relationships.
5.2.1	Collaborative learning	Children are supported to collaborate, learn from and help each other.
5.2.2	Self-regulation	Each child is supported to regulate their own behaviour, respond appropriately to the behaviour of others and communicate effectively to resolve conflicts.
QA6		**Collaborative partnerships with families and communities**
6.1	Supportive relationships with families	Respectful relationships with families are developed and maintained and families are supported in their parenting role.
6.1.1	Engagement with the service	Families are supported from enrolment to be involved in the service and contribute to service decisions.
6.1.2	Parent views are respected	The expertise, culture, values and beliefs of families are respected and families share in decision-making about their child's learning and wellbeing.
6.1.3	Families are supported	Current information is available to families about the service and relevant community services and resources to support parenting and family wellbeing.
6.2	Collaborative partnerships	Collaborative partnerships enhance children's inclusion, learning and wellbeing.
6.2.1	Transitions	Continuity of learning and transitions for each child are supported by sharing information and clarifying responsibilities.
6.2.2	Access and participation	Effective partnerships support children's access, inclusion and participation in the program.
6.2.3	Community engagement	The service builds relationships and engages with its community.
QA7		**Governance and Leadership**
7.1	Governance	Governance supports the operation of a quality service.
7.1.1	Service philosophy and purpose	A statement of philosophy guides all aspects of the service's operations.
7.1.2	Management systems	Systems are in place to manage risk and enable the effective management and operation of a quality service.
7.1.3	Roles and responsibilities	Roles and responsibilities are clearly defined, and understood, and support effective decision-making and operation of the service.
7.2	Leadership	Effective leadership builds and promotes a positive organisational culture and professional learning community.
7.2.1	Continuous improvement	There is an effective self-assessment and quality improvement process in place.
7.2.2	Educational leadership	The educational leader is supported and leads the development and implementation of the educational program and assessment and planning cycle.
7.2.3	Development of professionals	Educators, co-ordinators and staff members' performance is regularly evaluated and individual plans are in place to support learning and development.

Appendix 16 Comparison between Australia's NQS and the Operation Manual for Pre-primary Institutions

		Australia National Quality Standards (NQS)	Operation Manual for pre-primary institutions
Educational programme and practice	Programme	Enhances each child's learning and development	Integrate education and care elements (Chapter 7) Contain detail guideline on fees (Chapter 9).
	Practice	Educators facilitate and extend each child's learning and development	Unitary with curriculum and goals (Chapter 7)
	Assessment and planning	Educators take a planned and reflective approach to implementing programme for each child	Detail guideline on regulations (Chapter 11)
Children's health and safety	Health	Each child's health and physical activity is supported (sleep, relaxation)	Detail guideline split between Chapter 4-6: Medical health, sanitation, nutrition and diet
	Safety	Each child is protected	Very detail guidelines in Chapter 3- Safety Measures
Physical environment	Design	The design of facilities is appropriate for operation	Detailed, appropriate for child care operation
	Use	Environment is inclusive, promotes competence and supports exploration and play-based learning	Mentioned briefly under premises design, furniture and equipment.
Staffing arrangements	Staffing arrangements	Enhances children's learning and development	Purposes not clearly defined, mostly on staff qualifications.
	Professionalism	Management, educators and staff are collaborative, respectful and ethical	Not explicit on the educators and staff behavior, staff trainings were mentioned briefly (8.4.1).
Relationships with children	Between educators and children	Respectful and equitable relationships are maintained with each child	Not mentioned
	Between children	Each child is supported to build and maintain sensitive and responsive relationships	Not mentioned
Collaborative partnerships with families and communities	Supportive relationships with families	Families are supported in their parenting role and are respectful.	Supportive relationships mentioned briefly in 10.2.3.
	Collaborative partnerships	Enhances children's inclusion, learning and wellbeing	Detail in Chapter 10. Collaborative partnership enhanced through establishing parent-teacher association.
Governance and Leadership	Governance	Supports the operation of a quality service	Not mentioned (Role of inspection mentioned in childcare ordinances)
	Leadership	Builds and promotes positive organisational culture and professional learning community	Not mentioned

Note: The above Service Quality Standards are general guidelines for all service providers and are not specific to child care operations, hence the comparisons only have to be made between Australia's NQS (guidelines for child care systems) and the Operation Manual for Pre-primary Institutions.

Glossary

Abbreviations

AAP	American Academy of Paediatrics
ACECQA	Australian Children's Education and Care Quality Authority
AFI	Adjusted Family Income
AIC	Akaike Information Criterion
CCB	Child Care Benefit
CCC	Child Care Centre
CCC attached to KG	Child Care Centre attached to Kindergarten
CCCO	Child Care Centres Ordinance
CCCR	Child Care Centres Regulations
CCR	Child Care Rebate
CCS	Child Care Supervisor
CCSO	Child Care Services Ordinance
CCSR	Child Care Services Regulations
CCCSS	Child Care Centre Subsidy Scheme
CCW	Child Care Worker
C&SD	Census and Statistics Department
CSRP	The Hong Kong Jockey Club Centre for Suicide Research and Prevention
CSSA	Comprehensive Social Security Assistance
DC	Day Creche
DN	Day Nursery
EBDv	Early Brain Development
ECD	Early Childhood Development
ECDA	Early Childhood Development Agency
ECEC	Early Childhood Education and Care
EDB	Education Bureau
EHS	Extended Hours Service
EO	Education Ordinance
FSA	Funding and Service Agreement
GIS	Geographical Information System
HCA	Home Care Allowance
HCCS	Home-based Child Care Service
HKPSG	Hong Kong Planning Standards and Guidelines
JOKC	Joint Office for Kindergartens and Child Care Centres
KCFRS	Kindergarten and Child Care Centre Fee Remission Scheme
KG	Kindergarten
KG-cum-CCC	Kindergarten-cum-Child Care Centre
LSB	Large Street Block
MCHC	Maternal and Child Health Centre
MEXT	Ministry of Education, Culture, Sport, Science and Technology
MHCCC	Mutual Help Child Care Centre
MHLW	Ministry of Health Labour and Welfare
MoE	Ministry of Education

MSF	Ministry of Social and Family Development
NGO	Non-governmental Organisation
NQS	National Quality Standard
NSCCP	Neighbourhood Support Child Care Project
OC	Other Costs
OCCS	Occasional Child Care Service
OECD	Organisation for Economic Co-operation and Development
PE	Personal Emolument
SES	Socio-economic Status
SFO	Student Finance Office
SME	Subsidy for Manpower Enhancement
SOE	Subsidy for Operation Enhancement
SQS	Service Quality Standards
SWD	Social Welfare Department
2SFCA	Two-step Floating Catchment Area Method

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